REPORT

OF THE

GOVERNOR OF ARIZONA

TO THE

SECRETARY OF THE INTERIOR.

1905.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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CONTENTS.

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OFFICE OF THE GOVERNOR,
Phoenix, Ariz., August 26, 1905.

SIR: In compliance with your instructions, I have the honor to submit to you the following report of the affairs of Arizona for the fiscal year ended June 30, 1905:

INTRODUCTORY.

I am pleased to report the general prosperity of the Territory. Population is increasing at a rapid rate; all the various industrial interests are developing at an accelerated ratio, and a buoyant and hopeful feeling pervades our people.

Arizona presents so many unique features, so many difficulties that can not be appreciated by the inhabitants of the older communities of the country, that it is almost hopeless to attempt to present within the limits of an official report either the conditions to be met or the splendid developments that have been attained notwithstanding those difficulties. It is difficult for the resident of the Eastern States to realize that the products of the soil of the greater part of Arizona are only possible with the artificial application of water to the land; that the hay and the grain, and the fruits, are only obtained from irrigated lands.

The average eastern or middle western farmer would think it almost a prohibitive tax upon his industry to have to pay $1, $2, $3, or even more, per acre per year merely to supply his land with the water sufficient to sustain and promote the growth of his crops; but on lands of the fertility of ours and with a climate like that of our valleys such an apparent imposition is trivial when compared with the results. The conditions of soil and climate of those countries inhabited by the Anglo-Saxon are generally such that the artificial application of water for the cultivation of crops seems to him anomalous. In a vague, indefinite way we may know that a very large proportion of the inhabitants of the globe obtain their food supply from irrigated lands, but it is only in the comparatively newly settled arid parts of the United States that the significance of the fact is brought home to our realization. The American, with his accustomed energy, genius, and audacity, is just entering upon the contest with the desert. The subject is a new one to him; yet the intricate problems are being solved with characteristic promptness and upon lines entirely consistent with his notions of justice and individual freedom and independence.

The National Government is engaged in an interesting experiment in the reclamation of the arid lands. It is an interesting experiment from many points of view—from the social, the political, and the economic, as well as from the engineering standpoint.

Briefly stated, the Government has appropriated the proceeds of the sales of public lands in certain of the States and Territories to be used for the construction of dams and other works for the storage

and diversion of water for the reclamation of arid lands. In any given project the cost of the works is added to the Government price of the lands supplied with water by it and repaid in annual installments. In the event that lands already in private ownership are included within the area of service by the projected works, the Government may grant a water right to the owner upon terms to be fixed by the Secretary of the Interior. In either case the entire cost of the works is eventually returned to the Government and may be used by it in the construction of other works. The lands so reclaimed are worthless without the water. Eventually, when the Government has been reimbursed for the cost of construction, the works become the property and subject to the management of the associated landowners. This plan avoids the vice and evil tendencies of subsidy by the Government, for the relation between the Government and the owner of the reclaimed land is essentially that of creditor and debtor and not that of patron and pensioner. The Government simply takes the money it receives from the sales of certain of its lands to construct works to render other of its lands habitable and profitable, and consequently marketable, where it has been that individual or private corporate effort was inadequate. The Government gets back the money expended, and the settler retains his self-respect. It would be an unfortunate policy for the American Government to adopt that any of its citizens should become mere gratuitous beneficiaries of its bounty.

I advert specifically in later portions of my report to the projects now under way in this Territory under the provisions of the national irrigation act.

I am pleased, too, to note that there has been a perceptible growth in the civic pride of our people. It is so usual to associate the fact of Territorial government with crudity, lawlessness, laxity of morals, want of stability, and indifference to business faith and integrity that great injustice is often done us. It is true that in a new country there is at least a greater disregard of the conventionalities than in our older communities, but it does not necessarily follow that there is more real lawlessness, less of probity and integrity, or even a greater laxity of morals. Arizona has been made the subject of many careless criticisms by indifferent, incapable, and thoughtless observers. Many profess a profound shock of their moral sensibilities, while they are willfully or ignorantly blind to vices at home that would not be tolerated in "wide-open Arizona." I do not attempt in any degree to palliate any matter of just criticism, but the criticism should be just and the critic should know something of the conditions. That conditions are different here from those in the older communities is not evidence, as it is often assumed to be, that they are therefore worse here. This would suggest itself to those not wholly provincial, and Arizona can not be charged with provincialism. I think I can safely assert that life and property are safer in Arizona than in many, if not in most, of the States. Nowhere, I am sure, can a man who respects himself and his neighbor and his neighbor's rights, with reasonably strict attention to his own business, go about with more freedom and with greater confidence of personal safety than he can in Arizona. Locked and barricaded doors are in most parts of Arizona a novelty. The professional thief, as he is

known in the older and more thickly populated communities, is almost unknown in Arizona.

I have had occasion in my report to call attention to many things that may provoke instant criticism—the mere statement of some of them suggests it. But it is my opinion that fair criticism is not harmful, but on the contrary productive of good. It is a matter of common observation that most of the evils of the administration of public affairs arises from an indifference of the people. This indifference is chiefly because of a want of knowledge by the people of the evils, other than in a general way. As long as there is no publicity there is encouragement and opportunity for the growth of these evils. If the statement of these matters which are the subject of criticism shall call attention to them, it will also suggest the remedy.

The rainfall during the year has been far in excess of the normal. Its immediate effect was to renew the grasses on the ranges and to relieve the conditions threatening disaster to the live-stock interests. The streams relied upon to supply water for irrigation were replenished, and an abundance of water has been available for that purpose. Springs and streams in the mountains, which had for a long time, owing to the continued drought, been dead, are again living. The indirect results are reflected in all industries, doing much to revive hope and promote confidence in the development of the resources of the Territory. The good effected by the copious rains was not wholly unmixed with injury, however. Floods in the various streams were numerous and inflicted considerable damage to property. Railroad bridges and embankments were washed away; dams for diverting water for irrigation were destroyed, and canals were to a greater or less extent seriously damaged. In Apache County the damage to irrigation works was, proportionately, particularly heavy, dams and reservoirs which were the sole dependence of large cultivated areas having been destroyed. The aggregate of good, however, greatly outbalanced the ill that was done. Arizona had experienced a series of droughts extending over a period of six years. Each seemed more serious than the one preceding.

In his report of last year the governor reported that, as noted at the station at Phoenix, there was a deficit for the year of rainfall below the normal of 3.97 inches. For the year ending June 30, 1905, there was an excess over the normal of 12.33 inches. This condition is one full of encouragement.

The mining industry is being prosecuted with more energy than ever. A persistent and sensible effort is being made to take mining in Arizona out of the category of the purely speculative—"gambling"—pursuits. Intelligence, ability, and special scientific training and processes are being applied to the business in a greater degree than ever before, with the effect, naturally to be expected, of making it a more certain and less hazardous one. In times past much misdirected energy and many wasted thousands of dollars have been expended in the business. Better methods now prevail, with consequent better and more certain results.

The copper product is increasing enormously. If the ratio now prevailing shall continue Arizona will easily be the first copper-producing country in the world, if she has not in fact already attained that distinction.

The production of gold and silver is also increasing, but naturally at not so great a ratio as the baser metal.

Railroad construction has been almost continuously in progress throughout the year, opening up to the markets new or hitherto difficult sources of our natural wealth. Some of the new lines constructed constitute real scenic routes, and the achievements of the engineer and the courage of the builder challenge the wonder and admiration even more than the rugged difficulties encountered and overcome.

Harvests have been abundant, the ranges prolific, the mines productive beyond any previous record, and the people of Arizona are full of hope and courage for the greater and accelerated development sure to follow.

HISTORICAL AND DESCRIPTIVE.

The Territory has an area of 113,020 square miles.

The origin of the name Arizona is not definitely known. Bancroft the historian and some others have insisted that the name is from a supposed Pima Indian word "Arizonac," although Bancroft admits that the "aboriginal meaning of the term is not known." That historian treats as "extremely absurd" the suggestion that the name is of Spanish derivation, and he apparently bases that conclusion upon the fact that there is no similar word in the Spanish language. But it seems possible that "Arizona" may have had its derivation in the Spanish words *arida zona* (arid zone). The well-known tendency of uneducated speakers of the Spanish tongue to elide the last syllables of words ending in vowels, and their tendency to "run words together" would easily transform *arida zona* into "Arizona."

From 1851 to 1854 Arizona was a part of New Mexico and was theoretically divided into five or six counties—that is, the boundaries of the New Mexican counties extended west to California. But Bancroft points out that as Arizona—north of the Gila River, the only part then belonging to New Mexico or the United States—had no settlements there existed hardly a semblance of county jurisdiction. By an act of Congress, August 4, 1854, the Gadsden purchase (all of that portion of Arizona lying south of the Gila River) was added to New Mexico; and by an act of the legislature of that Territory, January 18, 1855, it was attached to Donna Ana County, a part of which it remained until 1863. But during that period, from 1855 to 1863, the existence of Arizona as a part of Donna Ana County was only nominal. The records of the time show, as the only indication of county rule, the occasional sending of a criminal to Mesilla, N. Mex., for trial. There were justices of the peace at Tucson, and perhaps elsewhere. From the beginning there was much complaint that the country was not and could not be properly governed from Santa Fe, and there were many petitions for a separate Territorial organization. A convention was held at Tucson on August 29, 1856, which resolved not only to send a memorial to Congress urging the organization of a Territory of Arizona, but to send a Delegate to Washington. The memorial was signed by some 260 names, and Nathan P. Cook was in September elected Delegate. He was not admitted to a seat, but his mission was brought before the House in

January, 1857. The Committee on the Territories reported against the Territorial organization, solely because of the limited population, but recognized the unfortunate condition of the people in the matter of their distance from the seat of government in New Mexico, and recommended a bill to organize a judicial district south of the Gila, to appoint a surveyor-general, and to provide for representation at Santa Fe, as well as for the regulation of land claims and mining titles. Such a bill was passed by the Senate in February, but was not acted upon by the House.

The President, in his messages of 1857 and 1858, recommended a Territorial government; Senator Gwin, in December, 1857, introduced a bill to organize such a government for the Gadsden purchase under the name of Arizona; the legislature of New Mexico, in February, 1858, passed resolutions in favor of the measure, though recommending a north and south boundary line on the meridian of 109; several favorable petitions were received from different parts of the Union, and in an election held at Tucson in September, 1857, the people had prepared a new petition and elected Sylvester Mowry as Delegate. The Delegate was not admitted, and Gwin's bill was not passed. In the following years Mowry continued his efforts with much zeal, but no success, being reelected as Delegate, and the people of Arizona held their meetings and sent more memorials, to which little attention was paid.

In 1860, from the 2d to the 5th of April, there was held at Tucson a constitutional convention, which proceeded to "ordain and establish" a provisional constitution to remain in force until "Congress shall organize a Territorial government, and no longer." The new Territory included all of New Mexico south of latitude 33° 40′, and was divided by north and south lines into four counties. A governor was elected in the person of Dr. L. S. Owings, of Mesilla; three judicial districts were created, the judges to be appointed by the governor, as were also an attorney-general, lieutenant-governor, and other officials; a legislature of 9 senators and 18 representatives was to be elected and convened at the governor's order; provision was made for organizing the militia; an election of county officers was called for May; the general laws and codes of New Mexico were adopted, and the records of the convention, constitution, and the governor's inaugural address were printed at Tucson in what was the first book ever published in Arizona.

Nothing was done under this nominal government beyond the election and appointment of officials. In November, 1861, Edward McGowan, district judge under the new régime, was elected Delegate to Congress. The New Mexican legislature the same year passed new resolutions in favor of a division, and also by act of February 1 created a new county, called "Arizona," from the western portion of Donna Ana County, with Tucson as county seat, but no attention was paid to this act, and it was repealed two years later. In December a bill came up in Congress to organize the Territory, but without success.

Finally, in March, 1862, the Arizona bill was again introduced and discussed in Congress. Unlike former bills, this adopted a north and south boundary on the meridian of 109, and named Tucson as the capital. Watts, the New Mexican Delegate, strongly advo-

cated the measure. It was urged on behalf of the measure that the white population of Arizona were entitled to protection and a civil government as citizens of the United States, which they had not received and could not receive under the Territorial rule of New Mexico. The bill passed the House on the 8th of May, 1862. In the Senate, after debate, the bill was postponed from June to December, but came up finally in February, 1863, when, under the championship of Senator Wade, and the clause fixing Tucson as the capital being removed, it was passed by a vote of 25 to 12 on the 20th and became a law on the 24th.

I have quoted thus freely from Bancroft, not only because of the peculiar interest attaching at this time to the question of again joining Arizona to New Mexico, but to controvert the assertions often expressed in the statehood debates last winter that the creation of the Territory of Arizona was the result of " political deals " in Washington, and not because of the merits of the proposition. It is clearly established that from the first the people of Arizona found their position as citizens of New Mexico intolerable, because of the vast distance that separated them from Santa Fe.

The Territorial act having been passed by Congress in February, 1863, and officials appointed by President Lincoln in March, the new Territorial government was formally organized by Governor John N. Goodwin and the other appointees, at Navajo Springs, on the 29th day of December, 1863. The flag was raised and cheered; a prayer was said by H. W. Reed; the oath of office was taken by the officials and a proclamation was read by the governor, in which the vicinity of Fort Whipple, established only a month earlier, was named as the temporary seat of government; and here all arrived on January 22, 1864. In May the fort was removed some 20 miles southwest, and near it, in July, the town of Prescott, the temporary capital, had been founded.

By proclamation of April 9 three judicial districts were created and the judges assigned; the marshal was instructed to take a census. At the election held July 18 there were chosen a council of 9 members and a house of 18; also, a Delegate to Congress in the person of Charles D. Poston. The legislature was in session at Prescott from September 26 to the 10th of November. This body adopted a mining law and a general code of laws, prepared by Judge Howell, called in his honor the Howell code, being based mainly on the codes of New York and California. It also divided the Territory into four counties, under the aboriginal names of Mohave, Pima, Yavapai, and Yuma.

There are now 13 counties in the Territory, as shown by the table below.

Counties of Arizona.

County.	Organized.	Area.	County.	Organized.	Area.
		Sq. miles.			*Sq. miles.*
Apache	1879	10,736	Navajo	1895	9,826
Cochise	1881	6,147	Pima	1864	9,424
Coconino	1891	19,322	Pinal	1875	5,824
Gila	1881	4,542	Santa Cruz	1899	1,212
Graham	1881	6,500	Yavapai	1864	7,863
Maricopa	1871	8,816	Yuma	1864	9,787
Mohave	1864	13,421			

Topographically the Territory presents two great divisions (vide Mr. F. W. Hodge, of the Smithsonian Institution, in the Encylopædia Americana): A plateau region in the north, made up of approximately horizontal strata, and the mountainous region in the south, consisting of uplifted strata plicated and folded with mineral rocks and intrusive veins. These mountain ranges are numerous and have a general northwest and southeast trend, with intermediate broad valleys often 20 to 30 miles wide. The chief mountain masses are the Castle Dome, Big Horn, Eagletail Chocolate, Dome Rock, Palomas, Harquahala, and Harcuvar in the southwest; the Aquaries and Colorado in the west; the great plateaus rising in what are sometimes called the Northside Mountains in the northwest; the San Francisco, Bradshaw, and Black in the north central; the Carrizo, Lukachukai, and Tunicha in the northeast; the Zuni, White, Mogollon, and Apache in the east; the Gila, Peloncillo, Pinaleno, Dragoon, Galiuro, Santa Catalina, Huachuca, and Baboquivari in the southeast and south. The isolated volcanic San Francisco Mountain, above Flagstaff, is the highest of all, rising in its greatest height to 12,794 feet, and in Humphrey Peak to 12,562 feet. The other important peaks in the Territory are Thomas, 11,496; Escudillo, 10,691; Graham, 10,516; Ord, 10,266; and Greens, 10,115 feet, while many other exceed 5,000 feet. To the south the surface falls abruptly to low ridges, mostly volcanic; thence by terraced mesas to a great desert plain little above sea level, cut by gullied stream beds drawing the occasional rainfall to the broad valley of the Gila.

The great northern plateau, or series of plateaus, range in altitude from 5,000 to 7,500 feet. Rising from them are numerous mountain spurs, buttes, and the cones of extinct volcanoes, while the Colorado River has cut through 6,000 feet of strata, exposing formations down to the Carboniferous and Tertiary marine strata, underlying Tertiary lake sediments and later alluvium; indeed, it has been said that every period of the world's history since the dawn of life is represented in the geology of Arizona. The surface of the land as it lies was formed by a huge Eocene uplift, the water action afterwards cutting the gorges and shaping the mesas and buttes. Another upheaval took place in the Miocene period with eruptive volcanoes. Near Holbrook, Navajo County, is a wonderful forest of fallen petrified trees, with trunks 4 feet thick, cracked into exquisitely colored blocks. Everywhere a feature of the landscape in the northern sections are great isolated mesas of sandstone with scarped and pinnacled sides, often more than 1,000 feet in sheer height. Most of the stream courses are dry, save in the rainy seasons. The largest river is the Colorado, which flows generally southwest from Utah for 200 miles through the famous Grand Canyon of Arizona, one of the wonders of the world, then turning south, forming the western boundary of the Territory until shortly before it reaches the Gulf of California. Its chief affluent in the Territory is the Gila, which flows entirely across its southern portion; other tributaries are the Virgin, the Colorado Chiquito, or Little Colorado, in the north, and Bill Williams Fork in the west. The most important tributaries of the Gila are the Salt and Verde rivers from the north and the San Pedro from the south. The Salt River, below its junction with the Verde, carries generally a volume of water larger than that of the Gila.

POPULATION.

I estimate the population of Arizona at this date (September 1, 1905) to be somewhat in excess of 170,000. The Director of the Census estimated on June 1, 1905, that the population of the Territory was 140,276, but the estimate furnished me does not explain how the conclusion was reached.

The figures at which I estimate the population are arrived at by basing calculations upon the increase in the number of votes cast and the increase of school population.

The Federal census of 1900 gave Arizona a population of 122,931. That census was notoriously incomplete. It was taken in the summer time, when hundreds of people were at the seashore and other places outside of the Territory, and it is known that a number of remote mining camps and settlements distant from the centers of population were not visited at all by the enumerators.

But for the purpose of making a conservative estimate I have accepted the census of 1900 as correct.

While citizens of Arizona do not vote for President, they take more interest in elections in Presidential years. There is no more reliable method of estimating the population than by taking the votes cast at the Territorial elections of 1900 and 1904 (both Presidential years) and the school census, noting the increase thereof, and taking the ratio of increase as the true ratio at which the general population has increased.

The total registered vote of the Territory in 1900 was 21,061. The registered vote for the election of 1904 was 31,806, an increase of 10,745 in four years, or 51 per cent. Were the registered vote to be taken for the purposes of comparison, it would show a population considerably in excess of the above estimate. The census population of 122,931 in 1900 being represented by a registered vote of 21,061, the registered vote of 31,806 in 1904 would indicate a population of 185,648. But as the registration books are not always entirely accurate, I have thought it best not to lay stress upon the registered vote for the purposes of comparison.

In the year 1900 there were 16,620 votes cast for Delegate to Congress. In the year 1904 there were 21,427 votes cast for Delegate, an increase of 4,807, or 28.92 per cent. In the five-year period from May, 1900, to May, 1905, the number of children of school age increased from 20,833 to 29,290, a gain of 8,457, or 40.59 per cent.

Thus it is seen that the votes cast increased at the rate of 7.23 per cent per year, while the school population increased at the rate of 8.11 per cent per year. Taking the percentage of the increase in the vote cast and the percentage of increase in the school population together for a basis of comparison, it is found that the two increased at the average rate of 7.67 per cent per year.

In five years, at this rate, there would be an increase of 38.35 per cent. And as five years have elapsed since the Federal census of 1900 was taken, it is altogether conservative to estimate that the population of the Territory has increased at the rate of 7.67 per cent each year, or 38.35 per cent since the census was taken.

An increase of 38.35 per cent would give an increase of 47,144 in the population of the Territory since 1900, or a total population at this time of 170,075.

It is a matter of the utmost public concern to know the character of the population of Arizona, and here again unimpeachable figures show that a grave injustice has been done to the Territory by writers and statesmen who have insisted that a dangerously large portion of our population is illiterate. During the statehood discussion in Congress assertions have been frequently made that "nearly 30 per cent of Arizona's people are illiterate," and the figures presented in the census reports have been brought forward in proof. Unfortunately for the Territory, however, these figures have never been analyzed.

Carefully, it would seem, the fact has been overlooked that the Indians, Chinese, and Japanese were included in the census returns of Arizona's illiterate population. The census of 1900 showed that there were 26,480 Indians, 1,419 Chinese, and 281 Japanese in the Territory.

The total number of illiterates in the Territory was given as 27,307. Of this number 16,659 were Indians, Japanese, Chinese, and negroes, leaving 10,648 as the number of "white" illiterates.

Of the 10,648 "white" illiterates 7,552 were foreign born; of the 3,096 illiterates remaining 1,830 were of foreign parentage. This would leave an illiterate native "white" population of but 1,266.

It should be remembered also that our citizens of Mexican descent are all classed as "white," and it is safe to say that of the 1,266 native "white" illiterates practically all were of Mexican descent.

For the purpose of depreciating Arizona's claims to statehood, a favorite argument is always found in the alleged illiteracy of her population, but the very census returns to which appeal is made for the purpose of sustaining these arguments firmly establish the Territory's claim to rank with the very best sections of the Union in the matter of low percentage of illiteracy. And for the purpose of showing the scantiness of her population emphasis is laid upon the fact that the census returns of 1900 include the Indians, while for the purpose of proving the illiteracy of Arizona's people the Indians are always forgotten.

Indeed, it is my observation from a long residence in the Territory, and from a fair knowledge of the population of many of our States, that Arizona has a smaller percentage of illiterate Americans than any other subdivision of the Union. I do not believe that there are 50 illiterate Americans in all Arizona.

Not only are our people not illiterate, but they are alertly intelligent and well informed. They read not only the local newspapers, but many thousands of the dailies that are published in the large cities of the country. The leading magazines and reviews have a large circulation in the Territory.

The quality of Arizona's citizenship will bear comparison with that of any State. It is of the best American type. Our people are law-abiding and law-upholding. There is a criminal element in the population, to be sure, and there are many crimes of violence, as must always be the case in a Territory which is not only on the frontier, but bordering on a foreign country—especially a Territory in which new mining camps are springing up and which offers attractions to adventurers. But crime is rigorously punished. The prompt and vigorous punishment of crime is due in a large measure to the efficiency of

our courts, of course, but the courts would be ineffective unless loyally sustained by the people. There has not been a lynching in the Territory in the past twenty years.

Of the 92,903 white persons returned by the census of 1900, 38,137 were of foreign birth or of foreign parentage. Of that number 12,002 could not speak English—a fact which of itself demonstrates that the illiteracy was practically wholly confined to our foreign-born population, for of the 12,002 who could not speak English there was but a small percentage that could read and write their own language. The census figures segregated into two groups the 12,002 persons above 10 years of age who could not speak English—" Italians," 186; " all other, Mexicans principally," 11,816.

Of the 38,137 persons of foreign parentage, 24,233 were born in foreign countries. The following table, made up from the census figures and now published for the first time in available form, shows the countries of their birth:

Foreign-born population, Arizona, 1900.

Country of birth.	Number.	Country of birth.	Number.
Austria	298	Japan	281
China	1,293	Mexico	14,172
Bohemia	16	Norway	123
Canada	1,269	Poland	22
Denmark	199	Russia	107
England	1,561	Scotland	399
France	253	Sweden	342
Germany	1,245	Switzerland	199
Holland	23	Wales	136
Hungary	22	Other and born at sea	415
Ireland	1,159		
Italy	699	Total	24,233

IMMIGRATION.

The only noteworthy feature of the immigration into Arizona from the various States of the Union was the marked increase in the number of miners who came from the Rocky Mountain States. The labor disturbances in Colorado induced several hundred miners to leave that State and take up their abode in this Territory. Aside from the mining States, the immigration was chiefly from the States of the Middle West—Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, Nebraska, and Texas.

The immigration from foreign countries was not of large volume. According to a statement furnished me by the Director of the Bureau of the Census of the Department of Commerce and Labor, the total number of aliens admitted at all ports from July 1, 1904, to June 30, 1905, who gave Arizona as their destination, numbered 854. This total does not include the immigrants from Mexico, as no record concerning them was kept. It is impossible to estimate accurately the number of immigrants from Mexico, but all the facts at hand seem to warrant the statement that the number of Mexican immigrants did not exceed a few hundred, and of these a large proportion were, as usual, but temporary sojourners. Mexican laborers are in the habit

of coming into Arizona from the neighboring State of Sonora for the purpose of seeking employment, and when their employment is ended they return to their homes. They are employed on the railroads as section hands, around the mines and smelters as surface workers, and to a considerable extent are employed in the mines.

In the tables printed below will be found interesting statistics of foreign immigration into Arizona during the fiscal year, as furnished by the Director of the Census:

FOREIGN IMMIGRATION.

Aliens admitted from July 1, 1904, to June 30, 1905, giving Arizona as their destination, distributed by race and occupation.

BY RACE.

Nativity.	Number.	Nativity.	Number.
Bohemian and Moravian	20	Italian (south)	34
Bulgarian, Servian, and Montenegrin	52	Japanese	70
Chinese	5	Lithuanian	4
Croatian and Slovenian	37	Polish	4
Cuban	11	Portuguese	2
Dalmatian, Bosinian, and Herzegovinian	23	Russian	11
Dutch and Flemish	8	Scandinavian (Norwegians, Danes, and Swedes)	39
East Indian	1	Scotch	22
English	216	Slovak	5
Finnish	6	Spanish	56
French	29	Spanish-American	1
German	47	Syrian	3
Greek	4	Turkish	3
Hebrew	3	Welsh	1
Irish	22		
Italian (north)	115	Total	854

OCCUPATION.

Occupation.	Number.	Occupation.	Number.
Actors	4	Millers	1
Clergy	5	Miners	220
Editors	1	Painters and glaziers	2
Electricians	1	Saddlers and harness makers	1
Engineers (professional)	15	Shoemakers	1
Lawyers	1	Stonecutters	1
Literary and scientific persons	2	Tailors	1
Physicians	2	Tinners	3
Bakers	3	Weavers and spinners	3
Barbers and hairdressers	1	Wood workers (not specified)	1
Blacksmiths	5	Other skilled	5
Brewers	1	Bankers	1
Butchers	1	Draymen, hackmen, and teamsters	1
Carpenters and joiners	8	Farm laborers	67
Clerks and accountants	22	Farmers	27
Dressmakers	1	Laborers	228
Engineers (stationary) and firemen	5	Manufacturers	1
Iron and steel workers	5	Merchants and dealers	28
Jewelers	1	Servants	30
Machinists	2	Other miscellaneous	4
Mariners	5	No occupation (including children under 14 years of age)	110
Masons	23		
Mechanics (not specified)	1	Total	854
Metal workers (other than iron, steel, and tin)	2		

FINANCIAL CONDITION OF THE TERRITORY.

The Territory is in better financial condition than ever before in its history. Its bonds are selling at a high premium and are eagerly sought by investors. At the close of the fiscal year the cash on hand in the Territorial treasury to the credit of the various funds amounted to $272,676.14, by far the largest sum that was ever before held by the treasury at the close of a fiscal year. The unexpended balance in the general fund was $67,335.63, the largest sum ever found in that fund at the close of a fiscal year. The increase over the previous year was $46,486.78.

The receipts from all sources amounted to $675,504.85, and the disbursements $593,071.48.

The aggregated bonded indebtedness of the Territory on June 30, 1905, was $3,108,275.29. Of this sum $2,075,302.86 represented the funded debt of counties and cities for which bonds of the Territory had been exchanged, leaving the net debt of the Territory proper at $1,032,972.43. These figures show an increase of $20,000 in the Territorial debt for the year, made necessary by the issue of bonds for improvements at the Territorial university and at the asylum for the insane—obligations incurred under an act of the twenty-second legislative assembly.

Territorial debt June 30, 1905.

Bond issue.	Account on which bonds were issued.	Time.	Interest rate.	Amount.
		Years.	*Per cent.*	
July 1, 1885	Asylum for the insane	20	7	[a] $10,000.00
Jan. 15, 1888	Territorial indebtedness	25	6	78,000.00
July 1, 1892	Territorial exhibit at World's Fair	20	5	30,000.00
July 15, 1892	Territorial and county and city indebtedness	50	5	2,000,000.00
July 15, 1896	Territorial and county indebtedness	50	5	300,000.00
June 1, 1898	Construction, capitol building	50	5	100,000.00
Jan. 2, 1902	Improvements, University of Arizona	20	5	25,000.00
Jan. 15, 1903	Territorial exhibit Louisiana Purchase Exposition	20	5	30,000.00
Do	Territorial and county indebtedness	50	5	92,000.00
Do	Indebtedness Pima County railroad bonds	50	3	318,275.29
July 15, 1904	Territorial and county indebtedness	50	5	94,000.00
Jan. 1, 1904	Improvements, asylum for the insane	50	5	20,000.00
Mar. 1, 1905	Expenses, university experiment station	20	5	11,000.00
	Total bonded indebtedness			3,108,275.29
	Deduct county and city funded debt			2,075,302.86
	Net debt of the Territory			1,032,972.43

[a] Paid July 1, 1905.

The indebtedness, June 30, 1905, funded by the issuance of fifty-year 3 and 5 per cent Territorial bonds under act of Congress approved June 25, 1900, and amendments thereto, is shown as follows:

County and city.	Rate.	Amount.	County and city.	Rate.	Amount.
	Per cent.			*Per cent.*	
Apache County	5	$43,473.50	Pinal County	5	$136,138.08
Coconino County	5	159,000.99	Yavapai County	5	338,740.07
Gila County	5	44,731.86	Yuma County	5	88,791.11
Graham County	5	147,364.70	Santa Cruz County	5	31,000.00
Maricopa County	5	281,636.43	Prescott	5	91,261.90
Mohave County	5	105,363.29	Tombstone	5	13,812.38
Navajo County	5	38,000.00	Tucson	5	27,423.71
Pima County	5	210,240.05			
Do	3	318,275.29	Total		2,075,302.86

Money received by the treasury during the fiscal year ending June 30, 1905.

Fund for which money was received.	Amount.	Fund for which money was received.	Amount.
General fund	$144,189.17	Normal school building fund	$16,375.27
Building fund, asylum for insane	21,877.90	Ranger fund	21,065.41
Interest fund, asylum for insane	42,962.20	Industrial school fund	22,034.21
Bond redemption, asylum for insane	10,491.02	Territorial interest fund	160,637.41
Improvement fund, asylum for insane	4.26	Prison fund	54,126.76
Interest fund, asylum for insane, act 73, 1903	1,141.13	Prison improvement fund	4.97
Capitol building fund	2,808.80	Territorial school fund	43,068.93
Capitol interest fund	5,278.32	University interest, par. 3663, 1901	2,101.00
Interest St. Louis Exposition bonds	1,499.83	University fund	25,631.75
Interest World's Fair bonds	1,594.26	University interest, act 47, 1903	815.20
Northern Arizona Normal School fund	16,809.46	Agricultural college fund	25,000.00
Normal school fund	31,833.54	License and inspection fund	14,184.05
		Northern Arizona dormitory fund	10,000.00
		Total	675,504.85

Money disbursed by the treasury during the fiscal year ending June 30, 1905.

Purpose for which disbursement was made.	Amount.	Purpose for which disbursement was made.	Amount.
General fund	$100,849.46	Normal school fund, Tempe	$17,058.97
Building fund, asylum for insane	20,890.52	Ranger fund	22,697.73
Interest fund, asylum for insane, act 73, 1903	500.00	Industrial school fund	22,377.46
Interest fund, asylum for insane	41,126.78	Territorial interest fund	137,073.26
Bond redemption, asylum for insane	10,021.09	Prison fund	53,518.31
Improvement fund, asylum for insane	1,599.71	Prison improvement fund	4,800.85
Capitol building fund	6,823.86	Territorial school fund	41,894.63
Capitol interest fund	4,950.00	University interest fund, par. 3663	1,250.00
Interest St. Louis Exposition bonds	1,500.00	University fund	23,888.46
Interest, World's Fair bonds	1,500.00	Agricultural college fund	20,000.00
Northern Arizona Normal School fund	14,186.88	License and inspection fund	13,733.70
		Northern Arizona dormitory fund	196.30
		Tempe normal dormitory fund	116.62
		Total	593,071.48

TAXATION.

The subject of taxation is as perplexing in Arizona as elsewhere. To devise and put in practice a system properly apportioning the burden of the cost of government is a problem attended here with difficulties much greater than those in the older States. Many conditions exist here that are influential in determining these questions which are hardly appreciable in the maturer communities. The Territory, for Territorial purposes, has two distinct important sources of revenue.

1. A direct levy upon real and personal property, subject only to certain species of exemption, proportioned to its value.

2. Fees exacted of corporations.

For county and municipal purposes the exaction of license fees for designated occupations is an additional important source of revenue. Certain fines and forfeitures are made to inure to the benefit of the schools, in addition to their other revenue.

Under an act of Congress the board of supervisors of the several counties are authorized to lease for limited but successive terms the lands embraced in the sixteenth and thirty-sixth sections of the public surveys. These sections were, by an earlier act of Congress, reserved from entry and sale to vest later in the future State for

educational purposes. The revenues derived from this source are devoted to the maintenance of the public school system.

There is also levied a poll or per capita tax of $2.50 upon each male inhabitant of the Territory over 21 and under 60 years of age, except upon members of the fire departments, of the National Guard, the Rangers, paupers, insane persons, and Indians not taxed. This revenue is also devoted to the maintenance of the public schools.

The exemptions from property taxation are: The property of the Territory, county, or municipal corporations; hospitals, asylums, poorhouses maintained without purpose of pecuniary gain; churches and chapels; public cemeteries; property of widows or orphan children to an amount not exceeding $1,000 where its total assessed value does not exceed $2,000.

By acts of the local legislature, from time to time, new railroads, beet-sugar factories, irrigation works, and works for the development of water power for the generation and transmission of electric power have been exempted from taxation for specified periods of time.

All property—except, of course, that exempted—must be assessed at its full cash value. The term "cash value" is expressed by statute to mean "the amount at which the property would be taken in payment of a just debt due from a solvent debtor."

Lands and the improvements thereon are required to be separately assessed.

Shares of stock in corporations other than those whose business is to loan money or "to make money by the use of money," are not assessable for taxation, it being held that the stock of such corporation has no value above the value of the property of the corporation for which it stands. Shares of stock in corporations loaning money or whose business it is "to make money by the use of money," are assessable in the county where the corporation does business, at a valuation to be fixed by the assessor.

The valuation of all property for the purposes of taxation is made once each year. Valuations of all property, except that of railroads, are made by the assessors of the several counties, each of the property in his county. Irregularities of assessment are adjusted by the board of supervisors of each county, which sits as a board of equalization. The powers of equalization of these boards are confined to property within their respective counties. A Territorial board of equalization is provided for, in which is lodged the power, among others, of examining into the various assessments, so far as regards the Territorial tax, and equalizing the rate of assessment in the various counties whenever they are satisfied that the scale of valuation has not been adjusted with reasonable uniformity by the different assessors and county boards of equalization.

The value of railroad property in the Territory, including lines and equipment, for taxation, is fixed by the Territorial board of equalization, and is apportioned to the various counties according to the extent of mileage within them, respectively.

The values of property for municipal taxation are fixed by the various municipalities.

The rate of taxation for Territorial purposes is fixed each year by the Territorial board of equalization, and is by it certified to the board of supervisors of the several counties. The boards of supervisors of the several counties fix the rate of taxation each year for

county purposes, and as well for local school purposes. The various municipal governments fix the rates of taxation for their own use. All taxes, though not levied until August, attach as a lien on property on the 1st day of February next preceding.

The statement of these rules seems very simple, but in application they become difficult.

In a new country like this real-estate values naturally fluctuate between wide limits. Every year success in some cases, and in others failure, are demonstrated, while the history of a single year may not be repeated, and in any event does not always afford a safe guide for the future. Population, as a rule, is increasing, and with it there is an increase in values of real estate, but as this increase is not uniform and not always permanent, so values must fluctuate. A large proportion of the wealth of the Territory consists in cattle, horses, and sheep. What their numbers are no one can know. They roam almost at will upon the uninclosed and mountainous ranges, and are never or are seldom within the view of even their owners. The assessors must depend for the number upon the lists made by the owners. That the owner ever overestimates the number of either he has is hardly to be supposed; the rule is that there will be an estimate short of the actual number. There seems from year to year no diminution in the number returned for taxation, yet from other sources it appears that the consumption in the local and foreign markets exceeds any fair estimate of natural increase, based upon the returns for taxation.

The proper taxation of railroads is a question of difficulty. The theory of our local system, as it should be of all, is that of uniformity and equality. If all property were brought within the view of the assessor, and its actual cash value ascertained, the purposes would be effected. In the case of railroads in this Territory, one or two, or perhaps three, results must be reached involving necessarily inequality.

In considering the question of taxation the railroads of the Territory may be divided into three classes.

1. Those wholly exempt from taxes.

2. Those upon which an arbitrary tax has been fixed, independent of value, and which it is not within the power of the Territory to affect.

3. Those whose valuation are to be fixed by the Territorial board of equalization.

Of those exempt from taxation for stated periods, under acts of the local legislature, there is a relatively large proportion of all the railroad mileage in the Territory.

In the second class is the Santa Fe Pacific Railroad, extending across the Territory from east to west, a distance of 390.99 miles. This road constitutes a part of the transcontinental line of the Santa Fe. By an act of Congress it is provided that it shall pay to the Territorial treasurer the sum of $175 per mile in lieu and in full of all taxes leviable for Territorial or county purposes. This flat rate is arbitrary, and must in every instance be greater or less than the rule of equality would impose. At a 3 per cent rate of taxation (which is probably less than the actual rate) this would fix the valuation of one of, if not the most, valuable railroad lines in the Territory at

$5,833.33 per mile. And this must be assumed to be a valuation fixed, inferentially, by Congress. It would seem, therefore, unequal to assess a railroad of no greater actual value at a higher rate, just as it destroys every notion of equality to assess arbitrarily 390.99 miles of a total of 1,837 miles at $5,833.33, or approximately that, and wholly exempt another 558 miles of the total mileage from any taxation. At best, if the railroads were the only property upon which taxes were to be levied, it would seem fair that those having no greater value than the one whose valuation is, inferentially, fixed at $5,833.33 per mile should not be assessed at a higher rate than that, and that roads of less real value should, for the purposes of taxation, be assessed at less than $5,833.33 per mile. But the railroads are not the only property upon which taxes are to be levied, and hence, if a valuation upon them is to be fixed at a proportionately lower rate than upon other taxable property, an inequality arises that is unjust to the owners of other property than railroads.

The statute attempts to fix a standard by which "cash value" may be measured. Its language is that cash value means "the amount at which the property would be taken in payment of a just debt due from a solvent debtor." As the cash value at which a creditor would take property from a solvent debtor in discharge of his debt is so wholly dependent upon the mere caprice of the creditor, and the motive so to do, if he does so, more influential than the mere wish to have his debt discharged, this rule affords no standard at all. As a creditor has a right to have money in discharge of his debt, he likely would not take property at even its market value, even if that value were well established and not variant, and his willingness to take property in discharge of his debt will depend upon his whim or the advantage he may derive from discounting its value. There being, therefore, no practical standard fixed by the statute, only the approximate relative values of the several kinds of property is to be expected. Such a rule would not, fairly applied, affect or impair the rule of equality and uniformity of taxation. But such a rule is not apt to be fairly applied, although it is a usual one, not only in Arizona, but in most of the other States and Territories.

When a departure from a standard of real values is permitted the measure becomes uncertain, and too much is left to the caprice of the assessor or to the wish of the particular community to evade its just portion of the taxes. In many instances of considerable importance I find the valuation of property for taxation at less than a fourth of the real value; again as high as a third, a half, or even three-fourths of the fair cash value; and again I find many instances, exceptional perhaps, but considerable, where property has been assessed up nearly to its fair market value. There will be, as there always has been in any system, some irregularities and consequent injustice. In some investigations I have had to make into this subject I am led to the conclusion that, in the aggregate, real and personal property, other than mines and railroads, are assessed in this Territory at from 35 to 40 per cent of their fair market value. To say that this ought not to be is a just criticism, but is relived somewhat of its severity when we find that it applies not alone to Arizona.

The fair and just taxation of mines presents more difficulties than does that of any other property. In many instances the title to the

mines is still in the United States, the operator holding possession under the mining laws permitting him to exploit the mine, extract the ores, and convert them to his own use. This right of possession is exclusive so long as the operator complies with the laws as to assessment work, which involves only a nominal expenditure. The interest of the operator in such a mine, as well as the mine itself, is called a mining claim, as distinguished from a mine the title to which has passed to the claimant by patent from the Government. The only substantial difference between the rights of the owner of a mining claim and the owner of a mine is that the right of the former is defeasible upon neglect to do the annual assessment, while that of the latter is absolute and indefeasible. The right of either is a proper subject of taxation in this Territory. The somewhat precarious right of the owner of a mining claim, however, under any law for the enforcement of the taxes is practically ineffective, because before it can be finally enforced the owner may voluntarily suffer a forfeiture of his claim, and the mine reverts to and becomes a part of the public domain which is, of course, not taxable. In connection with the mine itself, and as appurtenant to it, whether patented or not, machinery and apparatus of various kinds are necessary for the carrying on of mining operations. This kind of property is subject to taxation, either as improvements upon real estate, in the case of the patented mines, or as personal property in the case of mining claims. The value of such property, however, intrinsic or relatively, for the purposes of taxation is very largely dependent upon the fact whether or not the mine, for the operation of which the machinery was supplied, is productive, and upon the extent of its productiveness.

The first cost of mining machinery and the cost of its installation upon a nonproducing mine, or upon one that has become nonproductive, is not a very important element to be taken into consideration in determining its value. It is often wholly valueless, and is always greatly depreciated below its first cost.

In the very nature of things it is almost impossible to arrive at the real value of a mine. It is almost pure speculation to say what is in advance of the drill. The quantity of ore in a mine is never accurately ascertained until it has all been extracted, and the mine thereby exhausted and rendered of no further value. The quality of the unextracted ore is a matter of more or less intelligent surmise. Of course, it can be determined of every mine that it has, or it has not, some value. It can often be safely said of a mine where its contents have been so exposed, and with reasonable certainty its quality ascertained, that it may be estimated with considerable accuracy that it is worth at least so much money—but there may be, and often are, great values beyond that. I recall an instance of a statement of a mine owner in this Territory that in his mine he had by exploration exposed and made known the existence of ore in quantity sufficient to require the full capacity of his reduction works for a term of fifty years. This statement was made ten years ago, and events have fully justified his statement. Possibly there may be others in which similar predictions have not been fulfilled.

It has been fairly well established that copper mines are more extensive in respect to their ore deposits than are gold and silver mines, and while not permanent are yet much longer lived.

During the year 1904, from the best evidence to which I have had

access, the product of copper from Arizona mines was 202,298,772 pounds. Estimating copper at 12 cents (the average price at New York for the year was 13.01 cents) this would give the value of the copper production of Arizona for 1904 as $24,275,852.64. With unimportant exceptions this entire output was produced at a profit. Of gold there was, according to official estimates, 161,750 ounces, which, at $20.78 per ounce, makes $3,361,165. Of silver there were 2,754,134 ounces, which, at 55 cents per ounce, makes the value of that product $1,514,773.70. Thus it would appear that the entire product of the copper, gold, and silver mines of the Territory for 1904 was $29,151,791.34.

For the year 1904 the total valuation of all property in the Territory for the purpose of taxation, including the mines, was $45,069,545.32. Of this total valuation, mines and all improvements thereon constituted only $4,443,255.70. From the best information I can find the dividends paid by copper-mining companies for that year, 1904, amounted to at least $6,000,000. It is quite evident upon investigation, too, that a considerable part of the profits of mining is absorbed by railroads which have been constructed by persons interested in the copper companies. Just how much of the profits are thus diverted I have no means of knowing, and the Territory has not conferred upon the governor or any other Territorial officer any inquisitorial powers in the matter. The history of copper mining in the Territory shows that there has been a steady increase of production. The best authorities on the subject predict a very large increase for the year 1905. The development of new mines, the extension of old ones, and the constant improvement in methods of treatment of the ore seem to justify this prediction.

In the discussion of the subject of the taxation of mines, another consideration must be borne in mind—a matter that must be kept in view, too, in discussing the matter of the taxation of the lumber industry in the Territory, to which I shall later advert.

Whether a mine is short or long lived, its continued operation will sooner or later result in its exhaustion. When the ores have all been extracted the mine is of course valueless. In this Territory the lands either occupied by the mine or under which the ores are found are practically valueless, except for the very purpose of mining, or adventitiously as the place of abode of laborers employed in mining and those who are engaged in vocations directly dependent upon the profitable operation of the mine. The product of the mines is just so much subtracted from the capital stock of the Territory, and there is no possibility of reproduction. An ounce of gold or silver or a pound of copper once taken from the mines is gone, and it will never be reproduced. The products of the culture of the soil is added wealth. The operation of cultivating the soil appreciates the value of the soil. The continued operation is one of reproduction. Where a ton of hay, a hundredweight of wheat or barley can be produced, other tons of hay and hundredweights of wheat or barley can be reproduced with no diminution of the capital stock. It is well established that for nearly three hundred years crops of grain have been produced from the Gila River lands by the Pima Indians, and that those lands are just as productive now as at the beginning. But mines must become exhausted and cease to be productive. It is the most

persuasive argument advanced by mine operators that mines may become, possibly in the next year, exhausted and consequently valueless, and that therefore they should not be valued high for purposes of taxation.

I entertain no doubt that the mines of Arizona will, as they have heretofore done, go on increasing their production in even an accelerated ratio, but notwithstanding that they will sometime become exhausted. It is to be hoped, and reasonably expected, that that time is many decades off. In the meantime, however, the cost of government—Territorial or State, county, and municipal—has to be borne, and the question is, What is the just proportion the mines should contribute of that cost? As I have before stated, the law provides for the valuation of property for taxation once each year. This is no doubt because of fluctuation in value from year to year. It suggests that the legislature had in mind the instability of values of lands and of mines in a new country. In many of the older States lands are valued for the purposes of taxation at intervals of several years—five or ten years, or even longer intervals. If in Arizona such a rule were applied, the difficulty of a proper or fair valuation of mines would be practically insuperable. It would seem that a mine, or given extent of land devoted to agriculture, or for the support of a house, as in towns, ought to be worth in any year at least the value of its product either of copper, gold, or silver in the one case, of hay, grain, etc., in the other, or its rent in the last. In the case of agricultural lands it is several times that, and so of lots in a town, and the value in this Territory is so fixed for taxation. Upon this basis no injustice could be done the mines if they were assessed for taxation on the basis of their actual product for the year precedent the one in which the tax is levied. This is easily ascertained, and it eliminates from consideration the question of the permanence or instability of the value of the mine. If it would vary from year to year in product, so too would the exaction for the support of government vary, and in just the like proportion. Certainly any less rate, taking all things into consideration, is manifestly and grossly unjust to other classes of property.

The lumber interests I find, too, have been inadequately taxed. As that business has been carried on it has made direct inroads upon the capital of the Territory. The cutting away of the forests where nothing would be left but barren wastes does not develop the resources of the Territory—it simply exhausts them. As with the products of the mines, the larger portion, practically all of it, is transported and permanently remains out of the Territory. The product serves very little to enhance the wealth of the Territory.

Nearly every governor of the Territory in his annual report has taken occasion to call attention to the gross undervaluation of mines for the purposes of taxation. The fault has been not so much in the law as in the disregard of it by the local taxing officers. It is conceded by estimates made by the most conservative experts that the mines of Arizona have not heretofore been assessed in the aggregate at 5 per cent of their value. At the recent meeting of the Territorial board of equalization (August 14–21, 1905) an attempt was made in the direction of remedying this palpable evil. So careless or ignorant in the discharge of their duties have been the local taxing offi-

cers that gross inequalities are found in the assessment of the mining properties. It would appear that because of this disregard of duty any step taken to rectify the inequality in the valuation of such properties may work hardships in individual cases. These cases, however, are not numerous. It is a usual result where those charged with the administration of law are ignorant, habitually careless, or corrupt that an attempt to return to a fair administration of it is temporarily followed by apparent hardships upon some.

The attempt of the board to rectify the undervaluation of mines has resulted in the addition of $9,115,141.43 to the valuation of taxable mining property, making the total valuation of mines and improvements $14,440,689.31. That many of the mines are yet greatly undervalued is recognized. It is hoped that in the near future these discrepancies will be remedied.

As shown by the last annual report of the governor, the total valuation of the property in the Territory for taxation was $45,069,545.32. For this year it is returned at $57,920,372.84, showing an increase of $12,850,827.52. Aside from the increase in valuation made by the board of equalization, the increase over the preceding year is $3,867,115.31, as against $1,981,504.70 increase last year over the then preceding year.

Notwithstanding this notable increase in the assessed valuation of property in the Territory, the board of equalization deemed it advisable to leave the tax levy for Territorial purposes at 95 cents on each $100 assessed—the same rate as last year—in order to safely meet the extraordinary expenditures made necessary by special appropriations and tax levies of the Twenty-third legislative assembly, and the fact that a 2 per cent levy for bond redemption was overlooked last year. There is no doubt, however, that the addition to our taxable wealth will result in lower taxes for county and other local purposes; it certainly will if a policy of careful economy is observed by the boards of supervisors of the several counties.

The tax rate prevailing in each county for all purposes in the calendar years 1904 and 1905, including the levy of 95 cents for Territorial purposes above mentioned, is shown in the following table. The tax rate for 1905 was fixed in each county on Monday, August 21, after the respective boards of supervisors had received the report of the Territorial board of equalization.

Rate of taxation, by counties.

County.	Total tax per $100.		County.	Total tax per $100.	
	1904.	1905.		1904.	1905.
Apache	$3.80	$3.80	Navajo	$3.60	$3.95
Cochise	3.20	2.90	Pima	3.00	2.025
Coconino	3.00	2.90	Pinal	3.75	3.75
Gila	3.95	3.25	Santa Cruz	3.85	3.95
Graham	3.50	3.75	Yavapai	4.00	4.00
Maricopa	2.25	2.50	Yuma	4.41	4.50
Mohave	4.00	4.00			

Territorial tax levy for 1905.

Fund.	Per $100.	Fund.	Per $100.
General fund	$0.1803	Ranger fund	$0.05
Interest World's Fair bonds	.003	Redemption fund	.0225
Interest St. Louis Exposition bonds	.003	Tempe Normal School fund	.05
Asylum for insane interest fund	.10	Do	.025
Do	.0025	Do	.015
Capitol interest fund	.012	Tempe Normal School building fund	.055
Interest fund	.13	Territorial school fund	.03
Industrial school fund	.04	University fund	.06
Northern Arizona Normal School fund	.03	University interest fund	.005
		Do	.0017
Northern Arizona Normal School dormitory fund	.015	Total	.95
Prison fund	.12		

BOARD OF EQUALIZATION.

The Territorial board of equalization completed its equalization of the valuation of all the taxable property in the Territory August 21, 1905, its action being based upon the returns made by the boards of supervisors of the several counties.

The following tables show in detail the valuations fixed by the board:

APACHE COUNTY.

Property.	Number.	Valuation.	Increase.
			Per cent.
Cultivated land, acres	2,948	$25,899.00	
Improvements		6,715.00	
Uncultivated land, acres	95,638	45,654.75	
Improvements		9,082.50	
Railroad land, acres	788,522.37	157,704.46	
Town and city lots		12,477.00	
Improvements		40,440.75	
Horses:			
Range	1,686	16,860.00	
Work	435	17,400.00	38
Saddle	453	9,060.00	
Stallions	2	125.00	
Mules	43	1,505.00	40
Asses	126	882.00	
Cattle:			
Range and stock	6,016	72,192.00	
Milch cows	295	7,375.00	25
Sheep	73,631	147,262.00	
Goats	505	1,010.00	
Swine	33	91.00	
Railroad, standard gauge (Santa Fe Pacific), miles	54.48	255,509.21	
All other property		147,813.54	
Total		975,058.21	

COCHISE COUNTY.

Cultivated land, acres	43,354	$153,696.41	
Improvements		50,510.00	
Land grants, acres	56,981	263,979.30	
Improvements		2,000.00	
Patented mines	634	3,568,295.52	1,500
Improvements		173,947.01	
Unpatented mines, improvements		9,900.00	1,000
Town and city lots		1,226,697.69	
Improvements		1,569,243.60	
Horses:			
Range	1,501	15,010.00	
Work	1,505	60,200.00	19
Saddle	1,387	26,740.00	31
Stallions	14	1,400.00	
Mules	145	5,363.00	

COCHISE COUNTY—continued.

Property.	Number.	Valuation.	Increase.
			Per cent.
Asses	54	$290.00	
Cattle:			
Range and stock	32,575	325,750.00	
Beef	191	3,145.00	
Milch cows	707	20,760.00	
Bulls	408	23,800.00	
Sheep	200	375.00	
Goats	4,176	8,365.00	
Swine	272	724.00	
Railroad, standard gauge ..... miles	231.05	1,157,459.24	
Side track ..... do	24.47	61,175.00	
All other property		3,215,653.87	
Improvements, railroads		265,063.67	
Total		12,209,563.31	

COCONINO COUNTY.

Cultivated land ..... acres	40,620	$144,260.00	
Improvements		25,025.00	
Railroad land ..... acres	118,650	569,531.16	
Land grants ..... do	285,084	70,870.50	
Improvements		1,700.00	
Patented mines		5,800.00	
Improvements		5,050.00	
Town and city lots		141,148.00	
Improvements		330,985.00	
Horses:			
Range	1,858	18,580.00	
Work	723	28,920.00	
Saddle	783	19,573.00	
Stallions	3	300.00	
Mules	16	560.00	17
Asses	250	1,290.00	
Cattle:			
Range and stock	33,062	341,881.20	
Milch cows	172	4,300.00	
Bulls	27	1,520.00	
Sheep	143,929	287,858.00	
Goats	750	1,500.00	
Swine	62	310.00	
Railroad, standard gauge ..... miles	25	36,758.00	
Railroad, standard gauge (Santa Fe Pacific) ..... do	108.37	632,176.00	
All other property		1,124,346.08	
Total		3,794,261.94	

GILA COUNTY.

Cultivated land ..... acres	5,229	$23,220.00	
Improvements		11,715.00	
Patented mines	67	1,226,500.00	400
Improvements		395,620.00	
Unpatented mines, improvements		55,680.00	
Town and city lots		219,850.00	
Improvements		287,460.00	
Horses:			
Range	822	8,220.00	
Work	657	26,280.00	59
Saddle	1,365	27,305.00	
Stallions	9	405.00	
Mules	578	20,230.00	40
Asses	240	1,200.00	
Cattle:			
Range and stock	34,181	341,810.00	
Milch cows	972	2,430.00	
Bulls	7	175.00	
Sheep	120	240.00	
Goats	21,136	42,276.00	
Swine	342	1,032.00	
Railroad, standard gauge ..... miles	32.24	88,660.00	
All other property		413,890.28	
Total		3,194,198.28	

GRAHAM COUNTY.

Property.	Number.	Valuation.	Increase.
			Per cent.
Cultivated land ..... acres..	55,191	$489,897.25	.....
Improvements	.....	378,566.40	.....
Railroad land ..... acres..	25	500.00	.....
Patented mines	234	2,697,663.30	400
Improvements	.....	688,780.00	.....
Town and city lots	.....	110,143.50	.....
Improvements	.....	241,033.00	.....
Horses:			
Range	1,031	10,310.00	.....
Work	1,196	47,840.00	.....
Saddle	1,997	49,925.00	.....
Stallions	5	790.00	.....
Mules	169	6,760.00	.....
Asses	92	920.00	.....
Cattle:			
Range and stock	40,528	405,280.00	.....
Beef	27	270.00	.....
Milch cows	842	21,050.00	.....
Bulls	33	660.00	.....
Sheep	510	1,020.00	.....
Goats	12,471	28,942.00	.....
Swine	346	1,038.00	.....
Railroad:			
Standard gauge ..... miles..	124.96	425,969.00	.....
Narrow gauge ..... do....	26	67,050.00	.....
Side track ..... do....	.....	1,000.00	.....
All other property	.....	762,998.63	.....
Railroad improvements	.....	59,025.35	.....
Narrow-gauge side track ..... miles..	.....	9,000.00	.....
Total		6,502,321.43	.....

MARICOPA COUNTY.

Cultivated land ..... acres..	293,388	$8,569,977.00	.....
Improvements	.....	482,725.00	.....
Patented mines	14	7,000.00	.....
Improvements	.....	5,250.00	.....
Improvements, unpatented mines	.....	11,500	.....
Town and city lots	.....	2,397,790.00	.....
Improvements	.....	1,874,185.00	.....
Horses:			
Range	1,807	18,070.00	.....
Work	3,560	142,400.00	60
Stallions	25	2,625.00	.....
Ostriches	1,103	55,150.00	.....
Mules	267	9,345.00	29
Asses	10	820.00	.....
Cattle:			
Range stock	17,843	178,430.00	.....
Calves	2,675	13,375.00	.....
Milch cows	5,696	142,400.00	.....
Bulls	318	8,135.00	.....
Sheep	4,615	9,230.00	.....
Goats	1,608	2,410.00	.....
Swine	3,817	8,533.00	.....
Railroad, standard gauge ..... miles..	97.19	647,436.11	.....
All other property	.....	1,279,649.19	.....
Less exemptions ($228,015.00)	.....	.....	.....
Total	.....	10,638,420.30	.....

MOHAVE COUNTY.

Cultivated land ..... acres..	1,070.5	$3,915.00	.....
Improvements	.....	97,824.00	.....
Railroad land ..... acres..	42,445.03	8,489.00	.....
Patented mines	133	746,375.00	400
Improvements on patented mines	.....	120,217.00	.....
Improvements on unpatented mines	.....	25,980.00	.....
Town and city lots	.....	36,792.00	.....
Improvements	.....	76,290.00	.....

MOHAVE COUNTY—continued.

Property.	Number.	Valuation.	Increase.
			Per cent.
Horses:			
Range	674	$13,480.00	
Work	326	16,300.00	
Saddle	508	17,780.00	
Stallions	1	50.00	
Mules	6	210.00	1
Asses	36	210.00	
Cattle:			
Range and stock	9,324	93,240.00	
Milch cows	110	2,750.00	22
Sheep	8,125	16,250.00	
Goats	1,350	2,700.00	
Swine	42	210.00	
Railroad, standard gauge ..... miles	107.881	a471,979.38	
All other property		96,110.80	
Less widows' exemptions ($11,326.00)			
Total		1,835,826.18	

NAVAJO COUNTY.

Cultivated lands ..... acres	2,382	$39,196.50	
Improvements		13,859.00	
Uncultivated land ..... acres	9,934.54	17,955.58	
Railroad land ..... do	721,108.57	144,217.72	
Land grants ..... do	336,925.99	67,385.19	
Improvements		1,000.00	
Town and city lots		86,795.46	
Improvements		199,126.75	
Horses:			
Range	1,230	12,300.00	
Work	498	19,920.00	1
Saddle	502	10,680.00	
Stallions	6	550.00	
Mules	7	245.00	100
Asses	131	655.00	
Cattle:			
Range and stock	6,354	76,248.00	
Milch cows	418	10,420.00	24
Bulls	9	205.00	
Sheep	74,185	148,370.00	
Goats	425	850.00	
Swine	206	808.00	
Railroad, standard gauge (Santa Fe Pacific) ..... miles	57.155	263,200.00	
All other property		281,519.94	
Forest reserves ..... acres	44,638.96	111,596.90	
Total		1,507,104.04	

PIMA COUNTY.

Land ..... acres		$99,252.00	
Improvements		45,195.00	
Uncultivated lands ..... acres	75,524	298,233.00	
Improvements		15,731.00	
Land grants ..... acres	17,208	12,906.00	
Improvements		1,500.00	
Patented mines	288	629,142.00	500
Improvements		6,150.00	
Town and city lots		1,066,897.33	38½
Improvements		1,351,026.00	
Horses:			
Range	398	4,025.00	
Work	728	29,120.00	66
Saddle	503	10,060.00	
Stallions	11	430.00	
Mules	79	2,765.00	40
Cattle:			
Range and stock	20,685	206,940.00	
Milch cows	260	6,500.00	6
Sheep	2,250	4,500.00	
Brood mares	757	7,570.00	

a Estimated.

PIMA COUNTY—continued.

Property.	Number.	Valuation.	Increase.
			Per cent.
Railroad, standard gauge.....miles..	64.75	$461,345.00	
All other property		773,928.00	
Pullman Co		5,008.00	
Total		5,041,223.33	

PINAL COUNTY.

Cultivated and uncultivated lands.....acres..		$391,417.25	
Improvements		53,571.00	
Patented mines	72	69,600.00	
Improvements		41,225.00	
Unpatented mines, improvements		53,311.00	
Town and city lots		36,560.50	
Improvements		61,455.00	
Horses:			
Range	799	7,990.00	60
Work	552	22,080.00	66
Saddle	510	10,200.00	12
Stallions	7	450.00	
Mules	90	3,150.00	52
Asses	76	510.00	
Cattle, range and stock	13,445	161,893.00	
Sheep	2,500	5,000.00	
Goats	2,055	4,110.00	
Swine	398	1,133.00	
Railroad, standard gauge.....miles..	88.28	478,517.62	
All other property		32,991.38	
Total		1,435,164.75	

SANTA CRUZ COUNTY.

Cultivated land.....acres..	13,617	$35,572.00	
Improvements		57,600.00	
Land grants.....acres..	45,235	65,613.30	
Improvements		10,000.00	
Patented mines	50	381,150.00	500
Improvements		4,500.00	
Unpatented mines, improvements		29,500.00	
Town and city lots		207,621.00	
Improvements		273,340.00	
Horses:			
Range	1,429	14,295.00	
Work	396	15,840.00	60
Saddle	632	12,735.00	
Stallions	10	385.00	
Mules	82	2,870.00	60
Asses	166	599.00	
Cattle:			
Range and stock	23,036	230,360.00	
Milch cows	98	2,617.00	
Bulls	280	5,435.00	
Swine	84	289.00	
Railroad, standard gauge.....miles..	524	222,689.85	
All other property		300,565.02	
Total		1,873,576.17	

YAVAPAI COUNTY.

Cultivated land.....acres..	138,956.46	$199,414.04	
Improvements		119,975.00	
Railroad land.....acres..	210,689.76	46,503.46	
Land grants.....do...	99,445.20	49,722.51	
Improvements		3,000.00	
Patented mines	1,224	2,238,028.48	100
Improvements		970,735.00	
Unpatented mines		176,760.00	
Town and city lots		528,256.50	
Improvements		908,605.00	

YAVAPAI COUNTY—continued.

Property.	Number.	Valuation.	Increase.
			Per cent.
Horses:			
Range	1,838	$18,380.00	17
Work	1,783	71,320.00	50
Saddle	1,152	29,415.00	
Stallions	7	475.00	
Mules	22	7,770.00	50
Asses	240	1,490.00	
Cattle:			
Range and stock	27,395	27,395.00	
Beef	60	700.00	
Milch cows	640	1,600.00	
Bulls	18	350.00	
Sheep	29,147	58,294.00	
Goats	17,670	35,340.00	
Swine	648	1,925.00	
Railroads:			
Standard gauge ..... miles	60.558	264,941.25	
Narrow gauge ..... do	27.3	110,000.00	
All other property		1,218,963.85	
Total		7,350,314.09	

YUMA COUNTY.

Cultivated land ..... acres	58,285	$244,527.00	
Improvements		7,090.00	
Patented mines	52	72,012.00	500
Improvements		14,870.00	
Unpatented mines, improvements		10,198.00	
Town and city lots		236,305.50	
Improvements		114,935.00	
Horses:			
Range	187	2,057.00	
Work	1,008	40,320.00	60
Saddle	20	500.00	25
Stallions	2	175.00	
Mules	116	4,060.00	
Cattle:			
Range and stock	1,650	18,150.00	
Beef	5	70.00	
Milch cows	199	4,975.00	25
Bulls	3	46.00	
Swine	724	2,172.00	
Railroad, standard gauge ..... miles	82.5	587,816.28	
Pullman Co		6,381.80	
All other property		166,884.38	
Private car lines		29,736.35	
Total		1,563,280.81	

Aggregate valuations of all classes of property as found by the board of equalization.

Property.	Number.	Valuation.
Cultivated and uncultivated lands ..... acres	9,194,843	$5,420,263.45
Improvements		1,353,370.40
Uncultivated land ..... acres	181,096.54	361,843.33
Improvements		24,813.50
Railroad land ..... acres	1,881,440.73	926,945.80
Improvements		19,200.00
Patented mines		11,641,566.30
Improvements		2,426,294.01
Improvements on unpatented mines		372,829.00
Town and city lots		6,307,334.48
Improvements		7,328,125.10
Horses:		
Range	15,260	159,577.00
Work	13,367	537,940.00
Saddle	9,762	223,973.00
Stallions	104	8,160.00
Mules	1,820	64,833.00

Aggregate valuations of all classes of property, etc.—Continued.

Property.	Number.	Valuation.
Asses	1,421	$8,866.00
Cattle:		
Range and stock	266,064	2,726,124.20
Beef	283	4,185.00
Milch cows	10,409	241,577.00
Bulls	1,098	40,326.00
Sheep	339,212	678,399.00
Goats	62,148	123,503.00
Swine	6,974	18,265.00
Miles railroad:		
Standard gauge	1,187.214	5,994,456.94
Narrow gauge	53.3	177,050.00
Other railroad property		368,234.67
Side track	50.47	62,175.00
Ostriches	1,108	55,150.00
All other property		9,926,911.86
Calves	2,675	13,375.00
Brood mares	757	7,570.00
Total		58,159,713.84
Less exemptions		239,341.00
Total		57,920,372.84

Assessed valuation of the Territory, by counties, for the years 1904 and 1905.

County.	Assessed valuation.		Increase.
	1904.	1905.	
Apache	$1,044,645.60	$975,058.21	a $69,597.39
Cochise	6,850,132.49	12,209,563.31	5,359,430.82
Coconino	3,240,483.90	3,794,261.94	553,778.04
Gila	1,481,827.00	3,194,198.28	1,712,371.28
Graham	5,005,432.86	6,502,381.43	1,496,948.57
Maricopa	10,413,326.00	10,866,435.30	453,109.30
Mohave	1,308,689.29	1,847,152.18	538,462.89
Navajo	1,262,823.97	1,507,104.04	244,280.07
Pima	4,109,463.40	5,041,223.33	931,759.93
Pinal	1,620,634.40	1,435,164.75	a 185,469.65
Santa Cruz	1,476,298.83	1,873,576.17	397,277.34
Yavapai	5,973,083.79	7,350,314.09	1,377,230.30
Yuma	1,282,703.79	1,563,280.81	280,577.02
Total	45,079,481.32	58,159,713.84	13,090,168.52
Less exemptions	9,886.00	239,341.00	239,341.00
Total	45,069,545.32	57,920,372.84	12,850,827.52

a Decrease.

Valuation placed on railroad property for the year 1905.

Name.	Miles.	Rate.	Valuation.
Southern Pacific	392.5	$7,125.045	$2,796,580.35
El Paso and Southwestern	86.3	6,750.00	582,525.00
Maricopa and Phoenix and Salt River Valley	34.93	4,970.00	173,618.87
Arizona and New Mexico	40	5,504.50	220,180.00
New Mexico and Arizona	87.8	4,249.80	373,133.00
Morenci Southern	18	3,655.55	65,800.00
Central Arizona	11	2,000.00	22,000.00
Saginaw and Manistee	14	1,054.166	14,758.32
Gila Valley, Globe and Northern	124.3	3,128.7	388,897.40
United Verde and Pacific	27.3	4,029.304	110,000.00
Arizona Copper Co	8	2,500.00	20,000.00
	844.13		4,767,492.94
Santa Fe Pacific	386.734		a 1,873,246.25
Pullman Co			105,413.04
Total	1,230.864		6,746,152.23

a Estimated at current tax rate, as represented by $175 per mile.

The value of the railroads which are exempted from taxation can only be estimated, of course, by applying to the exempted roads the same ratio of valuation that has been applied to roads that are assessed. By this ratio the following valuations are found:

Railroad.	Miles.	Estimated valuation.
Phoenix and Eastern	94.80	$474,000.00
Arizona and California	49.20	286,000.00
Prescott and Eastern	61.90	216,000.00
Arizona and Utah	54	216,000.00
Cananea, Yaqui River and Pacific	.51	2,500.00
Arizona Southern	23	115,000.00
Santa Fe, Prescott and Phoenix	194	970,000.00
Grand Canyon	64	224,000.00
Total	558.40	2,652,500.00
Santa Fe Pacific[a]	386.734	2,785,979.69
Assessed roads and Pullman Co		4,873,905.98
Total		10,312,385.67

[a] By act of Congress is taxed at a flat rate of $175 per mile, but value of which is here estimated at $7,125.45 per mile, the same as the Southern Pacific.

MINING.

Mining is Arizona's chief industry. It yields greater returns than all other industries combined. The value of the products of the mines of the Territory during the last fiscal year was not less than $30,000,000. Copper is the principal product, although the production of gold is steadily increasing from year to year. This Territory is the third district of the United States and the fourth in the world in point of copper production. Before many years it will be first. It estimated that one-fourth of all the copper mines in the United States are situated in Arizona.

Although the first copper made in Arizona was turned out of an adobe furnace (at Clifton) in 1873, it is within the last ten years that the production has reached enormous proportions. Copper ores are found in more or less profusion in nearly every county of the Territory, but the well-developed districts are four in number—Bisbee, in Cochise County, 6 miles from the Mexican boundary; Jerome, in Yavapai County, in the north-central portion of the Territory; Clifton and Morenci, in Graham County, on the southern border of the Territory; and Globe, in Gila County, near the center of the Territory. Other and newer districts are becoming important producers, however.

Probably gold is found more generally distributed in all parts of Arizona than is copper. It occurs as placer deposits or in veins in nearly every mountain range from Yuma on the west to the Chiricahuas on the east, and from the Mexican border to the Colorado Plateau on the north. In short, an attempt to show the geographical distribution of the mineral wealth of the Territory results in the generalized statement that all of the mountain ranges are mineral bearing, but the chief region of occurrence of the precious metals and of copper and lead and of other metals and minerals lies south of the Grand Canyon region and of the great lava districts which surround the extinct volcanoes of the San Francisco Mountains. Most of the mountain ranges are strongly scarped and eroded and are generally

bare of vegetation, and their wealth of minerals is more accessible to prospectors than is the case with the mining regions of the Rocky Mountain States.

The Territory enjoys unique advantages in respect of climate in working mines and ores. Mining in the open air, without the protection of buildings, can be conducted every day in the year without hindrance from cold or extreme frost. Even in the midst of the Bradshaw Mountains or the central mountain ranges, snow seldom falls to so great a depth as to interfere seriously with mining work or to impede transportation. The weather at all seasons is comparatively dry and bracing, and in midsummer mining operations are conducted without cessation. In midwinter the days are bright and clear and are highly favorable to protracted labor. An economic and industrial advantage in being able to work mines and mills without hindrance or interruption from the weather may be best appreciated by those who have had to combat the fierce storms of Colorado, Montana, Idaho, and Utah.

The mining of gold and silver in Arizona began with the earliest settlement of the new world by the Spaniards. The early colonists of Mexico made incursions into Arizona in search of mineral wealth. There is historical foundation for the statement that Cabeza de Baca, one of Spain's most intrepid explorers, after deserting Narvaez in Florida, in 1538, made his way westward across the Mississippi and Rio Grande and to the Moqui villages in northern Arizona before he turned south to Mexico. According to Hamilton, Cabeza de Baca and his servant were the first foreigners to set foot on what is now Arizona soil. They carried to Mexico the aboriginal stories of the great wealth of the "Seven Cities of Cibola," and it was in search of the fabled seven cities that the mineral wealth of this region first became known to the Spaniards. About one hundred and fifty years later, or in 1687, the Jesuit missionaries, Fathers Kina and Salvatiero, established the first mission within the region now known as Arizona. Thirty years later there were nine missions firmly established. It is known that the Jesuit fathers in charge of the missions gave some attention to mining, and there are many places where remains of the Mexican style of furnace are found as well as piles of slag, which bear witness of the enterprise and industry of these early metallurgists. About the year 1700 reports reached the City of Mexico of the discovery of great masses of native silver in the northern regions in the locality since known as the Planchas de Plata, and not far from the present international boundary line near the present town of Nogales. That large quantities of silver were produced is likely from the fact that a prosecution was instituted by the royal treasurer of Spain against the discoverers of Arizona for having defrauded the royal treasury of the duties payable upon the masses of pure silver found there. Philip V, of Spain, on the 28th day of May, 1741, issued a decree terminating the prosecution and declared the district of Arizona to be royal property as a place in which silver was created. This decree recited that the weight of the balls, sheets, and other masses of silver then taken from the Planchas de Plata amounted in all to 4,033 pounds—one piece weighed 2,700 pounds.

8034—05 M——3

The Territorial geologist (Prof. William P. Blake), from whose data, gathered in former years, these notes are made, makes the interesting statement that the royal decree of 1741 made the first official use of the name Arizona. In 1687 a Jesuit missionary from the province of Sonora descended the valley of the Santa Cruz River to the Gila, which he followed to its mouth, now the site of Yuma. From this point he retraced his course to the Salt River and thence into Mexico. He procured authority from the head of the order in Mexico and established missions and settlements at numerous points. In a report to the viceroy of Spain he made a glowing statement of the mineral wealth of the new region. The reports of the immense wealth of the new country made by the Jesuits induced a rapid settlement. The mission towns of Tucson, Tubac, El Rey, St. Mark, San Salvador, Santa Cruz, Quidora, Rosario, San Fernando, and others were established. From the year 1757 to 1820 the Spaniards and Mexicans continued to work many valuable mines. From notes found and copied by the late Gen. Charles P. Stone in the City of Mexico it appears that more than 100 silver and gold mines were worked in the provinces of Sonora and Arizona by the Spaniards.

These discoveries account for Arizona's early prestige as a land of fabulous wealth, especially in silver. Very little appears to have been put on record in those days concerning the wealth of gold.

According to Professor Blake, the discovery of gold upon the American River in California in 1848 marks the most important era in the history of mining in Arizona. The Territory, then a part of Mexico, lay directly in the path of the gold seekers, not only from the Southern States, but from Mexico and Sonora. Mines in Sonora were deserted, and the route into California by way of Yuma was crowded with Mexican miners and their families bound for the new El Dorado. The thousands who pressed westward across the desert-like stretches along the Gila River gave little heed at the time to the riches immediately about them, but many of them, failing to find fortunes in California, returned a few years later and began prospecting in Arizona. New Mexico was ceded to the United States in 1848. Southern Arizona, south of the Gila River, was still Mexican territory. The Gadsden purchase was consummated in 1853. The work of the United States and Mexican Boundary Commission during the years from 1850 to 1853 and the exploration of Emory and Bartlett greatly stimulated the interest in this then comparatively unknown land. So also the explorations in search of a good route for a transcontinental road largely added to the public knowledge of New Mexico and hastened the development of Arizona. The overland mail route, commonly known as the "Butterfield route," was established in 1858. This gave access to the interior, which previously had been almost inaccessible, and greatly promoted immigration and the development of the mineral resources of the region.

Upon the acquisition of the country under the Gadsden treaty, active exploration of the mineral fields of southern Arizona by citizens of the United States commenced. As early as 1855 mining settlements in the Gadsden purchase were made at Arivaca, Sopori, the Arizona Mountains, the Santa Rita Range, Cerro Colorado, and the region about Tubac. Still earlier, in 1820, the mines near Fort Webstermouth, on the Gila River, were worked to great advantage,

and so rich was the ore that it paid for transportation on muleback more than a thousand miles to the City of Mexico.

But the pioneer miners throughout the early history of Arizona had to contend with a multitude of disadvantages and misfortunes, not the least of which was the maintenance of constant warfare with hostile Apaches. The real development of Arizona as a mining country began with the building of the transcontinental railroads through the Territory, and it is only since the construction of numerous branch lines within the last ten years that the mining industry has placed the Territory in the front rank.

The following notes, furnished by the Territorial geologist, give in a general way the progress of mining during the last fiscal year:

NOTES ON THE YEAR'S PROGRESS IN MINING.

[By William P. Blake, Territorial geologist.]

The Territory of Arizona is justly celebrated for the extent and variety of its mineral products. It is not only a large producer of copper, but also of gold, silver, lead, zinc, tungsten, molybdenum, and vanadium, the three last-named ores being of comparatively rare occurrence in other portions of the United States. Other mineral products may be added to this list, though not yet extensively worked or utilized, among these being coal, quicksilver, clays of various grades, some of the gems and ornamental stones, particularly some choice varieties of lime-onyx. The occurrence of saltpeter is reported, and there are well-known sources of salt and sulphate of soda, or Glauber's salt. A mine of asbestos is being worked in the canyon of the Colorado.

This diversity may be attributed to the diversity of geologic formations; to uplifts of various ages, and to the enormous erosion and cutting down of the mountain ranges by which mineral veins and deposits have been brought to light. Such erosion is manifest not only in the Grand Canyon of Arizona, where the pages of geological record of past ages are cut through, but in every mountain range, and in the succession of mountain ranges and broad valleys from the Gulf of California to the Sierra of New Mexico. And to this grand cutting down and wearing away of the elevations we also owe the wonderful agricultural capabilities of the great valleys of the Colorado, of the Gila, and of Salt River.

The soils of these valleys, unsurpassed in fertility, owe their excellence in large degree to the great variety in the mineral composition of the rocks from which they were derived during untold ages of grinding and trituration in the beds of mountain torrents. Thus the floods in the canyons, while breaking out the gold-bearing veins and laying bare mineral deposits for the miner, bear downward and onward the finer materials to be spread out in inviting fields for the farmer. The two great industries of mining and agriculture, being by nature so placed side by side and in close relation and interdependence, should be developed together harmoniously and advantageously.

GOLD.

The very general distribution of the sources of this metal, and the fact that in Arizona it is more generally diffused in and associated with mineral sulphides, has been mentioned in former reports.

Of distinctively gold mines, where this metal is the chief product of value, the Congress mine is probably the foremost example. It is upon a vein which has been followed down from the surface for more than 3,000 feet, and has been a large producer without interruption for years. The ore is largely pyrite, and is for the most part roasted and then cyanided for the extraction of the gold. No details have been received of the product for the year 1904. A crosscut at a considerable depth from the outcrop has developed an underlying parallel vein of high value, which is believed to extend to the surface and to offer a large production of paying ore for many years to come. A very promising strike of extremely high-grade ore was reported early in this year.

At the Octave mine, which was shut down early in 1905, work was resumed in June.

The King of Arizona, in Yuma County, has maintained its usual production.

The Commonwealth, at Pearce, has been closed, owing to caving in, and will not be reopened for the present. The large accumulations of tailings below the mill will be treated by the cyanide process. Mr. John Brockman, the superintendent and general manager since the purchase of the property, has secured a mine in Mohave County to which he is giving his attention.

The Gold Roads mine, in Mohave County, has completed a crosscut at the 600-foot level, reaching the vein, which is reported to have a width of 40 feet and to be of high grade.

The Vanderbilt, also in Mohave County, is being worked by the Cerbat Mountain Mining Company. A strike of very high-grade ore is reported.

In Graham County, in the Gold Hill district, a few miles north of Metcalf on the San Francisco River, a vein of free-milling gold ore of high grade has been opened by Col. Ben. M. Crawford, and is worked by a Los Angeles company of the same name. The ore is soft and ferruginous, and contains much lime-carbonate. It occurs near the contact of an altered limestone with granite.

The continued heavy rains of the winter of 1904 and 1905 greatly stimulated and promoted placer mining throughout the Territory. Chispas, or small nuggets, were picked up in the Weaver district, and 30 of them, worth from $2 to $75 each, were exhibited at Prescott.

The tributaries of the Hassayampa, at Walnut Grove, have also been producing, and several nuggets valued at $30 or $40 each are reported. The gold placers on Lynx Creek, Yavapai County, are under exploration by a company known as the International. A machine capable of handling 1.000 tons of gravel and dirt is in use.

The historic gold-bearing placers at Greaterville, on the eastern slopes of the Santa Rita Range, about 40 miles southeast of Tucson, have received much attention, and have been largely explored and worked through the energy and capital of Mr. G. B. McAneny, of California, and formerly of Tombstone. He has had a careful topographic survey made, and has constructed a ditch or aqueduct several miles long to carry water from the chief drainage canyon on the southeast slope of the mountain, where there is a heavy flow of water in the seasons of snow and rain. This aqueduct is cut for miles around one of the chief spurs of the Santa Rita in a conglomerate of massive proportions—a very thick bed of bowlders and porphyries of various colors and crystalline condition, and of all sizes from gravelly aggregates to bowlders 2 feet or more in diameter. These are all thoroughly rounded and so completely united or welded together as to resist the separation of one bowlder from another. They break under the blasts through the center of the bowlders, and not along the contacts, as if the whole formed one homogeneous mass of rock.

The heavy rainfall of the winter permitted the aqueduct to run full and to supply enough water at the placers, and particularly to those along the Boston Gulch, to install a hydraulic plant and long board sluices, by which a considerable area of the gravelly placer deposit was washed, with fairly satisfactory results. Many chispas were found, and the condition of the gold was such as to indicate that it had not been washed far from its source. The source of the gold of these Greaterville deposits has long been an enigma. It is probable that there are several sources. Coarse gold occurs in wire-like filaments in a stratum of peculiar argillaceous limestone, deposited in thin and numerous layers like the leaves of a book; and when, as is generally the case, it stands on edge it so much resembles an upturned volume that it merits the name of book limestone, which may be applied to it. This book limestone forms a series of layers aggregating 2 or 3 feet in thickness, and is very much bent, folded, twisted, and contorted, and where faulted and broken and reunited by oxide of iron and ferruginous talc spar, with probably some organic substance, gold is frequently found in it in coarse, wire-like filaments.

The whole region is very interesting from a geological point of view. From the results of a reconnoissance which I made for my friend, Prof. George W. Maynard, of New York, who was engaged in a careful inspection of the average value of the placers, I am led to conclude that the bulk of the Santa Rita Mountain, Old Baldy and Mount Wrightson, is made up of volcanic ejecta, now in the form of conglomerates and sandy tufas from the base to the summit, especially on the southeastern slopes, extending at a gentle grade from the summit of the mountain toward Patagonia, the Sonoita, and Nogales. It appears to be one great connected field of tufaceous deposits, giving evidence of former great volcanic activity in that section. The northern portion of the Santa Rita is granitic and porphyritic, with also very thick Paleozoic strata of

conglomerates, sandstones, and limestones. At Greaterville there is a well-marked horizon of Devonian, and in the Box Canyon section the sequence of the strata of limestone, red shale, and conglomerate, all resting upon granite, is admirably shown.

SILVER.

The chief mines of the Tombstone district, though generally regarded as producing silver only, might equally well be grouped with the gold mines, for as depth is reached on the lodes the gold contents of the ores are found to increase, and in some of the quartz ores of the Tranquility claim free gold in handsome specimens is not uncommon. The great enterprise of reopening the mines and pumping out the water, which for many years has prevented mining below the 600-foot level, has proceeded steadily. The level of the water has been lowered some 200 feet or more, permitting mining and drifting upon the 700 and 800 foot levels. Shipments of ore have been made regularly. The company has just installed a pump, in addition to the powerful pumps now in use, with a capacity of 2,500,000 gallons, which will carry the total daily pumping capacity to 6,000,000 gallons.

The Lucksure Company, working one of the outlying manganiferous mines near Tombstone, has been shipping ore at the rate of 4 carloads a week.

There have not been any recent developments of the other various important silver properties of the Territory, except possibly the reopening of the Peck mine, in the Bradshaw Mountains, formerly a large producer of silver. Crosscutting the ledge is now in progress to intersect the prolongation downward of the rich chute of ore which was mined in the upper levels.

In the Salero district work on the Eureka and Mabel claims in the Salero group was continued through the year without interruption, and shipments have been made of a high grade of ore to the El Paso smelter. This ore carries galena, gray copper, and native silver in a gangue of manganese spar and quartz. The workings are supposed to be upon the same lode from which the early settlers of this region procured the ore to be smelted at the old Tumucacori Mission, which yielded the silver for the lavish adornments of the altar and to make the saltcellars for the table of the bishop.

The Darwin mine, in the same region, only a mile or two south of the Eureka, has been lying idle for a year, except as the annual assessment required, owing to the giving out of a steam-power boiler, but work is now resumed and will be pressed until the ledge is fully crosscut at the 200-foot level, with the expectation of cutting the downward pitch of the main chute of copper-silver ore.

The World's Fair mine, south of Patagonia, which was reported sold, and from which some shipments were made, is still in the possession of its former owner, but is closed, it is stated, by litigation.

The ownership of the famous Mowry mine of silver-lead ore was transferred during the winter to a New York syndicate, and the mine has been steadily worked. There is much need of a smelter for this ore, and the project of building one and of the construction of a railway from the mine to the International Railway, near Patagonia, has been seriously discussed.

LEAD.

The lead ores of Arizona, without known exception, are silver bearing.

The localities of lead ores are numerous and widely spread. One of the most important districts is that of Castle Dome, about 30 miles north of Yuma, near the Colorado River, from which shipments are made to San Francisco. The ore is galena and is free from association with arsenical minerals or pernicious compounds. The lead made from it is remarkably pure and soft and is greatly prized for corroding by the manufacturers of white-lead paint. The galena carries from 20 to 30 ounces of silver to the ton of 2,000 pounds. Fluorspar is the chief gangue mineral. The veins are numerous and regular and have long been worked. The outcrops were followed and stripped to a depth of several feet by prehistoric miners.

The Flux mine, near Patagonia, is a large deposit of lead ore, worked at intervals, as required by the owner, Col. R. R. Richardson.

The Plomo mine in the Sazero and other lodes and claims in the same district are capable of supplying quantities of lead ore suitable for fluxing dry ores. The Plomo is reported sold to an eastern syndicate, and is to be opened by a deep tunnel. A railway is also projected to extend from the mine to the Sonoita Valley to connect with the International Railway at the point where it shall be decided to place a smelter.

In the Chiricahua Mountains, Col. E. P. Hand has been successfully extracting ore and shipping galena and lead carbonates for some years past. These ores occur in limestone of the age of the Lower Carboniferous.

Nearly all the lead ores of Arizona are associated with molybdenum, which appears in the form of wulfenite, the molybdate of lead, wherever the sulphide decomposes by oxidation. We are justified in believing that the molybdenum exists in the galena, or closely associated with it, in the form of molybdenite, the sulphide.

MOLYBDENUM AND VANADIUM.

The molybdate of lead derived, as above stated, occurred in notable quantity in the gold and lead-bearing ore of the Mammoth mine, at Shultz, in Pinal County. This mineral, by the crushing and milling operations, accumulated in the tailings. It was obtained by sluicing, and several carloads were shipped away, until the supply was exhausted.

There are several localities where both molybdate of lead and the vanadate of lead occur together, but owing to this mixture have not been commercially available.

Molybdenite, the sulphide, occurs in notable quantity in quartz at the claims of W. B. McClary, in the Santa Rita Mountains. These veins have been partly opened. Tests made in New York at the works, 17 Broad street, by means of resinous compounds, show a remarkably perfect separation of the sulphide from the quartz, the product being clean white quartz on one hand and the lustrous graphitic molybdenite on the other.

TUNGSTEN.

Shipments of the manganiferous wolframite, known as hueberite, on a small scale have continued from the claims north of Dragoon Station, on the Southern Pacific Railway. The ore is now obtained chiefly from the arroyos, from the gravelly deposits formed by the erosion of the rocks and veins. Some remarkably large and heavy masses have been washed out. The veins have been stripped along the croppings wherever the ore was visible, but have not been followed downward to any great depth.

COPPER.

Copper continues to be the leading metallic product of the Territory, and the year 1904 witnessed a rapid growth and expansion of the industry. Its chief centers are Bisbee, Jerome, Clifton, Metcalf, Morenci, Globe, and the Imperial.

At Bisbee many new claims have been located and opened up on the southward extension of the Copper Queen ore body.

The statistics of production show a steadily increasing output of the metal, as follows: Output for the year 1902, 119,000,000 pounds; 1903, 150,000,000 pounds; 1904, 224,000,000 pounds.

The figures available for the first portion of the year 1905 indicate a corresponding increase of production. The correspondent of the Engineering and Mining Journal in May, 1905, gave the following summary and estimate: "The Clifton-Morenci mines are now making about 5,000,000 pounds a month, the Old Dominion is making 2,600,000 pounds a month, and Bisbee-Douglas about 10,000,000. Jerome is turning out not less than 2,650,000 pounds, and smaller mines and smelters throughout the Territory about 500,000 pounds. This makes an annual product, if this rate is maintained, of not less than 240,500.000 pounds."

At the Copper Queen, Bisbee, the mining operations and the production of copper have been greatly promoted by the removal of the smelting operations from the mine to Douglas, in the Sulphur Spring Valley, where a smelting plant of colossal proportions has been established and is now (June, 1905) being extended. Sampling works have been added, and the company announces that it will buy copper and other nonlead ores and matte and all kinds of smelter products. This is very important to the copper miners of many districts by giving a near-by market for small lots of ore. The owners of the Copper Queen have also secured the coal fields at Dawson, N. Mex., and the El Paso and Northeastern Railroad, by which they can haul their own coal and coke to the smelters at Douglas and will be enabled to produce copper at a lower cost per pound.

The Calumet and Arizona is the title of one of the new companies in operation south of the Copper Queen. It is a large producer and is rated at 33,000,000 pounds of copper annually, and is said to make copper at a cost of 7½ cents per

pound. Its smelters are established at Douglas. Orders have been given for three great quadruple hoists, one for the Cole shaft, one for the Oliver, and one for the Junction. These hoists are each designed to hoist a load of 24,000 pounds from a depth of 2,500 feet in balanced skips, with a capacity of 3 tons of ore each.

This and other properties have encountered an enormous body of water on the lower levels, believed to be more formidable than the mine water at Tombstone. In the month of May the outflow of the Calumet was about 2,000 gallons per minute.

The United Verde, at Jerome, has maintained its large production, notwithstanding the inconvenience of a caving in of part of the mine early in June. At first there was considerable interruption and difficulty anticipated from the shifting and settling of the surface, but the company has been able to resume operations at a satisfactory approximation to normal conditions and production. The quantity of ore mined in 1904 was approximately 250,287 tons of 2,000 pounds each; quantity treated in 1904 was approximately 249,328 tons; amount of fine copper produced in 1904, approximately, 30,500,000 pounds.

The mines at Clifton, Metcalf, and Morenci, in Graham County, have been steady producers for the year. According to the correspondent of the Engineering and Mining Journal, in May, 1905, they were producing about 5,000,000 pounds a month, apportioned to the Arizona, the Detroit, and the Shannon companies. The Detroit, at Morenci, is credited with a production of 16,623,257 pounds of copper in the year 1904. The company is now adding a 40-ton concentrator to its plant, and expects to have it in operation by October, 1905. This, is is expected, will increase the production 40 per cent, carrying it to 23,250,000 pounds annually.

The Old Dominion, at Globe, Gila County, has for years been an important center of copper production. In April, 1905, three furnaces were in operation, and the daily output of copper averaged over 50 tons, and the total product in April up to the 25th of the month was reported as 950 tons, or 1,900,000 pounds. In the month of May the three furnaces were in blast, but the daily average of 100,000 pounds was not maintained for a few days, owing to insufficiency of blast, which has since been remedied, and the total production of blister copper for May was 3,103,000 pounds.

The Imperial Copper Company, working the property formerly known as the "Old Boot," near Red Rock, in Pima County, 40 miles west of Tucson, has been sinking and driving during the year, opening up its ground, and at the same time making shipments of ore by rail to Douglas. The property was connected with the Southern Pacific Railroad main line at Red Rock by a railroad 20 miles in length, constructed by the Imperial Company.

The adjoining properties of the Red Rock and Atlas patented claims, which have in past years been considerable producers of excellent copper ore, are now under bond and development by Percy Williams in behalf of eastern capitalists.

There has been increased activity in the prosperity and development of copper claims and mines in Pima County in the neighborhood of Tucson.

The Twin Buttes mine has been partly acquired by Mayor Rose and associates, of Milwaukee, who are sinking a deep shaft and are constructing a branch railway from Tucson to the mine, with the expectation of shipping the ore to El Paso or Douglas or to the smelter projected at Tucson. This activity at the Twin Buttes has stimulated work at the Helvetia and at the Azurite; also at Rosemont, the Phelps and Schley claims, and in the Sierritas, notably at the Purcell, Gifford, Armogosa Contzen, Borton, Hughes, and others.

In the central portion of the Catalina Mountains, north of Tucson, and at the headwaters of the Canada de Oro, there has been much work done by tunneling under the plane of contact of an uplifted area of limestone now resting upon a massive dioritic rock. This contact is marked by a development of garnet and epidote, the result of alteration, mingled with iron pyrites, copper pyrites, and blende. It constitutes a low-grade copper ore, averaging about 3 per cent, with occasional bunches of richer ore. Considerable work has also been done on the eastern side of the same contact at the Giesman, or Condon camp, where work was suspended in 1904.

At the old Apache mine active prospecting work has been carried on during the past year by Robert Leatherwood, resulting in the opening up of a fine body of copper sulphide, chiefly bornite, of high grade. About 100 tons of this ore was on the dump in the month of March, 1905, and had been broken out from a short tunnel into the contact and without drifting along the contact either way.

TREATMENT OF COPPER ORES BY THE ELECTRIC FURNACE.

The measure of success which has attended the experiments abroad upon the treatment of copper ores on a commercial scale in electric furnaces justifies a somewhat extended notice in this place, particularly as the electric methods of reduction are especially applicable in regions where fuel in the forms suited to furnace work is not procurable at a moderate cost. This is the condition over considerable areas of the mountain region of Arizona remote from railways. At the same time the conditions of the production of electric energy are often very favorable. As a case in illustration, the copper ores of Leatherwood's claim, at the old Apache mine camp in the Catalinas, and the ores of other claims in that region, are far distant from a supply of coke, but are in close proximity to the mountain streams at the sources of the Canada de Oro. Under such conditions the smelting by electric current would appear to be practicable and profitable. The requisite conditions are (1) a supply of ore; (2) water power. The ore need not be moved beyond the mouth of the mine; the electric energy can be carried to it by a wire across mountain ridges and canyons, and only the valuable metal product requires wagon transportation.

That such conditions and results are not chimerical and fanciful is shown by, and we may refer to, a recent report of a commission appointed by His Majesty's Government to investigate the different electro-thermic processes for the smelting of iron ores and the making of steel in operation in Europe, published by the department of the interior, Ottawa, Canada, Eugene Haanel, superintendent of mines.

The letter of instructions from the Hon. Clifford Lifton, the minister of the interior, states that—

"The special object of this investigation is the ascertainment of all facts in connection with these (electric) processes which are necessary for determining the cost of one ton of product, the quality of the product, and the cost of the machinery employed and such other facts as may be required for the formation of a judgment regarding the feasibility of introducing successfully in Canada, electro-thermic processes for the production of iron and steel."

The report shows that both iron and steel are successfully made on a considerable scale at several places abroad. This fact alone is of great importance to Arizona, where there are many deposits of iron ore of high grade, but probably the chief point of immediate interest is a description of the electro-thermic process as applied to copper, known as the "Keller process," presented by the commission in an appendix to its report. It is in the form of a translation from the French of a lecture by M. Vattier, an engineer delegated by the Chilean Government to investigate the electric smelting of copper. He was intrusted by the Chilean Government with the study of the latest developments of electro-metallurgical processes in Europe and the United States. He took from Chile some 200 tons of copper ores and manganese ores for the purpose of making experiments on a commercial scale.

The experiments were conducted upon two kinds of ore:

1. Copper ore from the "Volcan," containing approximately 7 per cent in the form of copper pyrites. It contained from 8 to 9 per cent of sulphur. The gangue contained silicates, free silica, a little carbonate of lime, "but mainly micaceous copper oxide."

2. Low-grade copper ore from the mining regions of the vicinity of Santiago, Chile, mixed with a small proportion of manganese and lime.

The composition of the charge of the furnace was as follows:

	Per cent.		Per cent.
Carbonic acid	4.310	Iron	28.500
Silica	23.700	Manganese	7.640
Alumina	4.000	Phosphorus	.046
Lime	7.300	Copper	5.100
Magnesia	.330	Arsenic	Trace.
Sulphur	4.125		

The ores were crushed coarsely and were in the condition of coarse lumps and partly as dust. The mixture was charged into the crucible by a hand shovel and there was no inconvenience from the presence of the fires as in blast furnaces. The main furnace was a chamber, or boxlike crucible, built of refractory brick about 6 feet in length by 3 feet in width and nearly 3 feet in depth (1.80 meters, by 0.90 by 0.90 meter). It had a forehearth about 4 feet by 2 feet and 2 feet high. This forehearth was used for the separation of the matte from the slag. At the bottom of the upper chamber, or crucible, openings were provided

through which the contents could be drawn off into the forehearth by tapping through the fire-clay plugs. The electrodes were of carbon, with a square section of 0.30 meter (about 12 inches) on the side, and a length of 1.70 meters (about 5 feet 6 inches). These were so suspended that their height could be changed at will, so that they could be plunged into the bath or be raised above its surface. The forehearth was also provided with electrodes for the purpose of reheating the contents. Openings were provided at different heights in the side of the fire hearth through which either the slag or the matte could be tapped. The operation of this furnace is described as follows:

"The two large electrodes are lowered into the crucible and the electric circuit is established by the introduction of pieces of carbon and of matte placed at the bottom and the temperature is gradually raised. Fusion ensues in a short time. Ore is charged into the crucible around the electrodes, which are raised up as the melted charge rises. When the crucible is full of molten or semimolten metal it is tapped near the bottom and the contents are drawn off into the forehearth, where the reactions are completed and the separation of the liquified materials is effected by means of the reheating electrodes. When the forehearth is nearly full the slag is discharged through one of the upper openings and the matte is drawn off through a lower opening. The process thus requires a succession of tappings from both the lower and upper furnaces."

The smelting capacity of this furnace was 25 tons per twenty-four hours, producing copper matte.

The current used was alternating, of 4,750 amperes, 110 volts; practically 500 kilowatts, or 68 horsepower. Therefore, to treat 100 tons of ore per twenty-four hours 2,833 horsepower are required from the dynamos, or, in round numbers, 3,000 horsepower of 70 kilograms.

The following products were obtained in the experiments:

(1) Matte of the following composition:

	Per cent.		Per cent.
Silica	0.800	Sulphur	22.960
Alumina	.500	Phosphorus	.005
Iron	24.300	Copper	47.900
Manganese	1.400		

(2) Slag containing by analysis—

	Per cent.		Per cent.
Silica	0.800	Manganese	8.230
Alumina	5.200	Sulphur	.570
Lime	9.900	Phosphorus	.062
Magnesia	3.300	Copper	.100
Iron	32.500		

It thus appears that in these experiments they obtained a copper matte of 47.90 per cent and a slag containing only one-tenth of 1 per cent copper from an ore carrying only 5.10 per cent copper. M. Vattier observes in regard to this process that for good results it is advisable to use a voltage sufficient to cause the ore or electric current to pass from one electrode to the other by regulating the height of the electrodes to just clear the surface of the bath in order to avoid as much as possible their coming in contact with the bath. The carbon at such high temperatures has a tendency to reduce the iron oxide into metallic iron, with the inconvenience also that there is a more rapid wear of the electrodes, a loss of electric energy, and a lower grade of matte. It is suggested that by the use of Acheron's graphite electrodes these inconveniences would be greatly diminished. The wear of the electrodes was found to amount to 75 kilograms per ton of copper in the matte, at a cost of, say, 45 francs.

In the comparison between the old process of smelting copper and the electric smelting, M. Vattier considers the case of a copper mine known as the Volcan, in Chile, South America, at a distance from the coast in the foothills of the Cordillera where the cost of coke is at least 100 francs, but where there is a constant powerful hydraulic power which can be economically utilized. Taking as the basis of comparison 1 ton of copper ingots from a 7 per cent ore, he finds that to treat in the ordinary water-jacket furnace some 16 tons of ore with the production of matte containing 1 ton of copper would require 3,200 kilos of coke, at a cost of 100 francs per ton, or an expenditure of 320 francs for fuel. In the electric furnace the reduction or smelting of 16 tons of ore would require an energy of 1.25 kilowatt year at a cost in the region named of 30 francs per kilowatt year, representing a cost of 37.50 francs, say 38 francs, as against 300

francs for the same result by the ordinary furnace. We should add to the cost of the electric furnace 45 francs per ton of copper in the matte to cover the wear of the electrodes, making a total cost per ton of 83 francs, showing a saving of 230 francs, or more than $47 per ton.

Other advantages in favor of electric smelting are cited as follows:

1. Suppression of the blowing engines for the water-jacket furnaces.
2. Possibility of operating on much more refractory ore than with the ordinary furnaces.
3. Avoidance of briquetting flue dust.
4. Lessening cost of labor.
5. Elimination of danger of scaffolding in the furnace.

The comparison is further extended by considering a lower grade of ore, say a 4 per cent ore, in which case the production of 1 ton of metallic copper in the matte would require an additional expenditure for coke of 180 francs, and in the electric furnace an additional saving of 157.50 francs.

It is declared to be difficult to arrive at a general average figure representative of the saving effected by the adoption of the electric furnace. It depends not only upon the grade of the ore, but, also, greatly on the local conditions. In the case of the South American mines remote from the coast and in proximity of powerful and constant waterfalls the economy effected would not be less than $50 per ton.

RECENT EXPLORATIONS.

Important monographs upon the copper deposits of the Globe and other districts have been published by the United States Geological Survey. An extensive descriptive report on the Clifton and Morenci districts by Doctor Lindgrem is in press and will appear shortly. The Copper Queen district has been carefully examined and described. In the month of September, 1905, a detailed examination and survey of the Tombstone district will commence under the direction of Mr. F. L. Ransome, assisted by Mr. W. H. Emmons. These monographs are important and valuable to the mining industry of Arizona and incidentally to that of the world.

QUICKSILVER.

The quicksilver ore, of which a box of specimens was sent to the school of mines through the agency of Mr. Herbert Brown, of Yuma, consists of cinnabar diffused through an earthy and quartzose gangue. This ore occurs in veins which can be traced for a long distance in the hills 14 miles east of Ehrenberg, on the Colorado River. Five full claims have been located and acquired by the Colonial Mining Company, which proposes to erect suitable furnaces for the production of the metal, meanwhile extending the development of the mine to a depth of 400 feet. One shaft is already down 200 feet. About 1,000 feet of work has already been done on the property. The vein is said to have a surface width of 4 feet, and 6 feet at a depth of 200 feet.

Mining locations.

County.	Number of locations in fiscal year ended—		County.	Number of locations in fiscal year ended—	
	June 30, 1904.	June 30, 1905.		June 30, 1904.	June 30, 1905.
Apache	None.	None.	Pima	652	612
Cochise	3,076	1,826	Pinal	893	500
Coconino	506	68	Santa Cruz	469	354
Gila	483	543	Yavapai	1,822	1,448
Graham	508	354	Yuma	661	972
Maricopa	401	283			
Mohave	747	545	Total	10,218	7,505
Navajo	None.	None.			

SURVEY AND SETTLEMENT OF PUBLIC LANDS.

During the year there was a fairly active demand for public lands. This demand covered mineral and agricultural lands. There has been a yearly decrease in the number of original homestead and des-

ert-land entries—entries of land intended for farm homes—and this is because the demand for land is limited by the water supply. Practically all of the water available for irrigation is already in use, and until the Government shall be ready to invite settlers for lands under new irrigation systems the entries of homesteads will continue to decrease.

During the year there were 159 applications for patents for mineral locations. The locations embraced in these applications comprised 402 lode claims, 12 mill-site claims, and 1 placer claim, making a total of 415 claims. One hundred and fifty-one mineral surveys were approved.

During the previous year there were 134 applications for patents for mining claims, embracing 451 lode claims, 5 placer claims, 4 mill-site claims, making a total of 460 claims.

Seventeen contracts, or special instructions in lieu of contracts, were issued providing for the execution of public surveys covering approximately 650,000 acres of agricultural or grazing lands. During the previous year surveys of 461,934 acres were made and approved.

The two land districts in the Territory show a total of 292 original homestead entries, covering 41,325 acres, and 24 original desert entries, covering 2,919 acres. During the previous year there was a total of 453 original homestead entries, covering 62,120 acres, and 32 original desert-land entries, covering 5,074 acres.

The total cash receipts from all sources reported by the two land offices were $57,188.30. In the previous year the cash receipts amounted to $72,492.50.

Since the close of the fiscal year orders have been issued for the consolidation of the two land districts, the office of the consolidated district to be at Phoenix.

The immense area of the public domain yet remaining in the Territory is evidenced by the figures showing that the grand total of unappropriated and unreserved lands amounts to 47,082,321 acres.

Detailed reports of the business transacted at the local land offices in the Territory will be found in the annual report of the Commissioner of the General Land Office.

AGRICULTURE AND IRRIGATION.

There is practically no farming in Arizona without irrigation. In some portions of the Territory, in the higher altitudes of the mountains, farming is practised to a limited extent without irrigation, but it is only in the valleys, where water can be supplied to large areas, that agriculture has been developed into a great industry. To this date but little more than three-fourths of 1 per cent of the total area of the Territory has been reclaimed, and the stretches of desert are so vast in comparison with the irrigated districts that a statement of the area under cultivation is not at first impressive.

But the assessed valuation of the farming land and its productive capacity make agriculture the second industry in the Territory, mining being first. In point of assessed valuation and taxes paid, however, the agricultural industry for several years has been first, and mining second, a palpable injustice to the farming interests, as elsewhere explained.

Perhaps there is no other region in the world in which the farmer is so bountifully recompensed for his labor as in Arizona, when adequate water for irrigation can be obtained. In the valleys of the Salt, Gila, Colorado, and Verde rivers the climate is so favorable and the soil so fertile that one crop immediately succeeds another, so long as water can be had. The principal field crops are alfalfa, barley, corn, oats, and wheat. Orchard fruits, grapes, and semitropical fruits also do well. Arizona oranges are first on the market and command always the highest price.

The statistics collected by the Government in 1902 furnish the most reliable data now available concerning irrigation in the Territory, and the figures of that year apply with equal accuracy to the present time.

In 1902 the total number of acres irrigated was 247,250, divided into 3,867 farms. These farms received water through 648 systems supplied by streams. The total estimated construction cost of these stream systems, including 1,776 miles of main canals and ditches, was $4,591,570, an average of $18.97 per irrigated acre.

The figures printed in the table below show that 90.5 per cent of the total irrigated acreage and 88.1 per cent of the total construction cost of systems in the Territory were in the Gila-Salt River drainage basin. In this drainage basin the principal irrigation districts are in the Salt River Valley, Maricopa County, and in the upper valley of the Gila, in Graham County. These are followed in order of area and value by irrigated districts in Pinal County, on the Gila River; by the region reclaimed in Yuma County, on the Gila and Colorado rivers, and by the Verde Valley, in Yavapai County.

The assessed valuation of farm lands in Maricopa County this year is $3,659,977, and the assessed valuation of improvements $482,725, making a total of $4,052,702. The assessed valuation of farm lands in Graham County is $489,897.25, and of the improvements thereon $378,566.40, making a total of $868,463.65.

There is a marked disparity between the number of acres reported by the Government as actually under irrigation and the number of acres of farm land assessed for taxation. This arises from the fact that in the four agricultural counties of Graham, Maricopa, Pinal, and Yuma land has been reclaimed and patented under the homestead law and the desert-land act far in excess of the present available water supply.

For illustration, the Government found in 1902 that the total number of acres actually irrigated under canals from the Gila and Colorado rivers in Graham, Pinal, and Yuma counties was 91,109. This year the same counties returned for taxation 168,780 acres of farm land, as follows: Graham County, 55,191; Pinal County, 55,304; Yuma County, 58,285.

And in Maricopa County 125,007 acres were reported to be under actual irrigation, whereas this year the same county returns 293,388 acres of farm land for taxation. Altogether the four counties have 462,168 acres of farm lands assessed for taxation, while the total number of acres irrigated is estimated to be 216,116.

These figures show at a glance what will be accomplished by an adequate system of water storage for the principal agricultural counties of the Territory. The great reservoir system now under con-

struction in the Tonto basin on the Salt River for the farm lands of Maricopa County will, it is thought, furnish water sufficient for the complete irrigation of the entire 293,388 acres of farm lands. Not only that, but it will easily double the market value of the entire acreage and double its productive capacity. When the Salt River reservoir shall have been completed the Salt River Valley will have, in round numbers, 300,000 acres of land under cultivation under a model system of irrigation. These 300,000 acres will fully equal in value 1,000,000 acres of the best farm land in the Mississippi Valley. Coincident with the completion of the reservoir there will be a wholesome subdivision of agricultural holdings in the Salt River Valley. Under existing conditions large tracts are held under single ownership. The reclamation act contemplates that not more than 160 acres shall be held by one owner under a Government reservoir, and the enforcement of this policy will result in throwing many thousands of acres of Salt River Valley land upon the market.

The construction of the projected reservoir at San Carlos, on the Gila River, in Graham County, would be followed by the irrigation of the entire 55,304 acres of farm land now taxed in Pinal County—of which not more than one-tenth is irrigated at the present time. In addition to that the San Carlos reservoir would furnish water for many thousands of acres of land now held in the public domain, and, as elsewhere pointed out, it would effectually solve the question as to the best method of making the Pima and Maricopa Indians completely self-supporting.

The Territory is exceedingly fortunate that two great irrigation systems are already under construction by the Government—the Salt River reservoir already alluded to, and the Yuma irrigation project on the Colorado River.

NOTE.—The report of the operations of the Reclamation Service in Arizona during the year ended June 30, 1905, will be found in the report of the Reclamation Service for the present year, which, under the act of June 17, 1902 (32 Stat., 388), is to be submitted to Congress.

Irrigation in Arizona in 1902.

Source of water supply.	Farms irrigated.	Acres irrigated.	Irrigation systems.			
			Number.	Cost of construction.		Main canals and ditches.
				Total.	Average per irrigated acre.	
All sources	3,867	247,250	781	$4,688,298	$18.96	*Miles.* 1,783
Streams:						
Colorado River and tributaries, exclusive of Little Colorado River and tributaries, and Gila River and tributaries	274	10,661	58	275,250	25.82	118
Little Colorado River and tributaries	456	11,776	74	264,746	22.48	184
Gila River and tributaries, exclusive of Salt River and tributaries	1,669	80,448	302	1,372,024	17.05	834
Salt River and tributaries	1,293	138,810	210	2,672,815	19.26	624
White River and tributaries	6	384	4	6,735	17.54	6
Other sources:						
Springs	41	1,061	25	6,766	6.38	17
Wells	128	4,110	108	89,962	21.89	.....

AGRICULTURE.

[By Prof. R. H. Forbes, director of the experiment station of the Territorial University.]

Farming and stock raising, which depend immediately upon the soil for returns, are in Arizona more than usually diversified, both in the products secured and in the methods employed. This is due, primarily, to the remarkable climatic conditions of the region, which in the southern and western parts of the Territory combine less than 20 inches annually of rainfall, more than 70 per cent of possible sunshine, few sharp frosts in winter, long periods of extremely hot weather in summer, and very low atmospheric humidity. As is evident from these cultural conditions, the development and advantageous use of water in this region is of the first importance. Water being secured, the long growing season, the variety of crops possible, and in most cases the excellent home markets for produce, make farming more than usually profitable.

At the present time there are not far from 250,000 acres of land actually under irrigation in the Territory. Reclamation service operations now in progress at the Tonto dam site on Salt River and at the Laguna site on the Colorado above Yuma will easily increase the net irrigated area to about 500,000 acres available for occupation probably within five years.

In addition to this area there are fully 500,000 acres more, chiefly along the Colorado and Gila rivers, for which there is water and storage capacity, and which in course of time will undoubtedly be reclaimed.

Artesian water has thus far been developed in the upper Gila and San Pedro valleys, in the extreme southeastern corner of the Territory, and very recently near Salome in the west-central part of the Territory. Considerable development has been made by means of these artesian flows, although they are as a rule not great in quantity.

Irrigation by pumping is making steady progress in many localities. When the cost of fuel is reduced to that which obtains, for instance, in Southern California, large areas of desert lands now underlaid with good water supply will come into cultivation.

In the higher and cooler parts of the Territory where climatic conditions are not so severe, dry farming—that is, without the use of irrigating streams—is parctised to some extent, and is capable of extension over large additional areas.

The grazing industries, cattle and sheep, now depending upon the free range for support, are capable of much greater returns when the conditions of occupation have been so improved as to do away with the old wasteful methods in vogue and permit a proper and effective use of the grazing country.

In brief, it may be stated that when to areas now in cultivation are added the alluvial lands along the Colorado, when the underground supply is developed by means of artesian and pumped wells, and when grazing-range conditions are improved, the Territory will contain the equivalent of considerably more than 1,000,000 acres of the most fertile and productive irrigated lands known in this country.

The fertility of irrigated soils in this region, already well supplied with mineral plant foods, is further assured by the sediments, rich in nitrogen and organic matter, brought upon lands by river irrigating waters. The exceedingly important problem of the maintenance of fertility in this region, therefore, is less to be reckoned with than in regions where farming depends upon rainfall.

With water at command and with fertility of soils assured, the Arizona irrigator is further favored by a combination of growing seasons which enables him to produce a constant succession of crops. From January to June the temperature resembles that of spring and early summer in the latitude of Kentucky. From June to September the climate is of subtropical fervor, while from September to November there is a second mild season of temperate weather. The winter season, from November to January, though subject to sharp frosts in southern Arizona, is not seriously or even uncomfortably cold.

Owing to this combination of seasons, a remarkable variety of crops may be found in the same locality at different times of the year. Strawberries, which flourish in Greenland, may be found on common ground with the date palm from Sahara. Alfalfa, the great forage of the arid West, flourishes alongside of wheat, corn, and sorghum, respectively characteristic of Minnesota, Illinois, and Kansas. Oranges, lemons, and olives from California may be found in the same neighborhood with peanuts and sweet potatoes from Virginia. In brief,

many of the leading crops of both temperate and subtropical countries, which are not affected by a too arid atmosphere or by the frosts of winter, flourish in southern Arizona. In northern Arizona, where the temperatures more resemble those of northern Illinois, many more distinctively temperate-region crops flourish, such as corn, potatoes, apples, and various small fruits.

The earliness of the season for some crops, such as oranges, melons, tomatoes, apricots, and other export products, is an advantage to the Arizona farmer, while the strong demand for farm supplies in the many mining camps and towns of the Territory maintains a fair average of produce values.

What these values are may be judged by the following figures relating to certain crops grown on the experiment station farm during 1901:

Crop.	Yield per acre.	Gross value per acre.	Cost of producing and marketing per acre.	Net value per acre.
	Pounds.			
Wheat	2,150	$22.55	$10.25	$12.30
Potatoes	3,600	85.00	34.50	50.50
Tomatoes	12,300	225.00	75.00	150.00
Strawberries	5,000	500.00	150.00	350.00
Melons	27,000	140.00	26.00	114.00
Egyptian cotton	400	68.00	48.00	20.00
Corn	1,735	18.00	9.50	8.50

Some idea of the diversity of crops and their constancy throughout the year may be gained from the following table, taken from Bulletin 48 of the experiment station, which gives for each month the crops which may be planted and harvested:

Diversity of crops and their constancy.

Month.	Planted.	Harvested.
January	Wheat, barley, oats, alfalfa, peas, beets, potatoes, cabbage, carrots, lettuce, spinach, turnips, radishes, asparagus seed and roots, onion sets, strawberries, blackberries, grape cuttings and plants, deciduous fruit trees, date seed.	Cauliflower, lettuce, spinach, table beets, turnips, radishes, oranges, and pomeloes.
February	Wheat, barley, alfalfa, Indian corn, peas, beets, tobacco, potatoes, tomato seed, bush squashes, lettuce, spinach, turnips, radishes, onion sets, celery seed, asparagus plants, strawberries, blackberries, deciduous fruit trees, citrus fruits, olives, date seed.	Cauliflower, cabbage, lettuce, spinach, table beets, turnips, radishes.
March	Indian corn, cotton, beans, melons, cucumbers, squashes, pumpkins, citrus fruits, olives, eucalypts.	Cauliflower, cabbage, lettuce, spinach, beets, turnips, radishes, carrots, green onions, asparagus, strawberries.
April	Egyptian and Kaffir corn, cowpeas, cotton, date plants, eucalypts.	Grain, hay, alfalfa, green peas, cabbage, lettuce, spinach, table beets, carrots, turnips, radishes, green onions, asparagus, strawberries, mulberries.
May	Egyptian and Kaffir corn, cowpeas, date plants.	Wheat, barley, oats, alfalfa, table corn, peas, potatoes, bush squashes, string beans, cabbage, lettuce, table beets, carrots, turnips, asparagus, strawberries, blackberries, plums, apricots, peaches.
June	Egyptian corn, cowpeas, melons, squashes, pumpkins, date plants.	Alfalfa, Indian corn, potatoes, tomatoes, melons, cucumbers, bush squashes, beans, beets, carrots, onions, strawberries, blackberries, figs, plums, peaches, apricots, apples.
July	Indian and Egyptian corn, millet, cowpeas, plums, melons, squashes, pumpkins, date plants.	Cowpeas, sugar beets, alfalfa, tomatoes, melons, cucumbers, grapes, figs, plums, peaches, apples, pears.
August	Peas, beets, beans, cowpeas, millet, potatoes, cabbage and cauliflower seed, carrots, celery plants, cucumbers, lettuce, eucalypts.	Egyptian and Kaffir corn, sorghum, sugar beets, cowpeas, tomatoes, melons, grapes, figs, plums, peaches, apples, pears, almonds.

Diversity of crops and their constancy—Continued.

Month.	Planted.	Harvested.
September..	Wheat, barley, oats, peas, beans, potatoes, beets, cabbage and cauliflower seed and plants, celery plants, lettuce, spinach, radishes, carrots, turnips, onion seed.	Egyptian and Kaffir corn, sorghum, cowpeas, cotton, melons, grapes, plums, peaches, apples, pears, dates, pomegranates.
October.....	Small grains, alfalfa, clovers, peas, beets, cabbage seed and plants, onion seed, carrots, radishes, turnips, lettuce, spinach.	Cowpeas, cotton, Egyptian and Kaffir corn, sorghum, millet, alfalfa, tomatoes, melons, cucumbers, squashes, pumpkins, string beans, grapes, plums, peaches, apples, quinces, pears, dates, pomegranates.
November..	Small grains, alfalfa, clovers, peas, cabbage plants, radishes, beets, turnips, lettuce, spinach, strawberries, date seed.	Indian corn, Egyptian corn, sorghum, cowpeas, alfalfa, potatoes, tomatoes, pumpkins, squashes, peas, beans, lettuce, spinach, table beets, turnips, radishes, celery, strawberries, grapes, peaches, apples, pears, quinces, olives, dates, oranges, pomeloes, pomegranates.
December ..	Small grains, peas, radishes, strawberries, date seed.	Lettuce, spinach, table beets, turnips, radishes, celery, strawberries, apples, pears, olives, dates, oranges, pomeloes.

STAPLE CROPS.

ALFALFA.

Probably the most important crop in Arizona is alfalfa. With from four to seven cuttinge a year possible, it may be stated that probably in no considerable district within the United States does this plant yield more abundantly.

It has several values in our agriculture. First, as hay there is a constant market at good prices in the adjoining mining country, prices for baled hay ranging from $7 to $14 a ton. A more profitable disposal of alfalfa, ordinarily, is as a stock fattener. It is employed for feeding hogs and cattle; also in connection with a thriving dairy business. It is estimated that about $1,500,000 worth of alfalfa hay and fat cattle are exported annully from Salt River Valley. With improved methods of feeding this output can doubtless be greatly increased.

With butter now being shipped into Arizona from Kansas, it is also evident that there is yet room for the growth of the dairy industry. There are at present five creameries and cheese factories in the Territory, and a condensed-milk factory is also in operation.

Another very important use of alfalfa is as a soil renovator. Our semiarid desert soils are commonly dense and deficient in humus and nitrogen—circumstances leading to a condition of poor tilth, which often makes successful culture of ordinary crops a difficult matter. Alfalfa, however, flourishes in these soils, and in so doing loosens them to considerable depths by means of its roots, and through its processes of growth and decay contributes the much-desired humus and nitrogen to the soil. In this way alfalfa serves as a preparation for other crops; and it is a matter of common observation that orchards, wheat, sugar beets, and other crops all flourish best on ground which has previously been in alfalfa.

BARLEY.

From early times barley has been grown in Arizona as a hay crop, being cut and baled for this purpose before maturity. Four or 5 tons of hay per acre is a fair yield. Certain varieties of beardless and hulless barley recently introduced have advantages over the ordinary bearded. The yield of grain per acre is from 30 to 50 bushels.

CORN.

Although small, quick-growing varieties of corn have long been grown by the Indians and Mexicans in the Southwest, it is only within the past few years that fine crops of improved varieties have been grown by the American farmer. In order that the grain may be set properly, corn must be planted in July, late enough so that in maturing it may just escape the fall frosts. With the long

growing seasons it is possible, water supply permitting, to mature a crop of corn after harvesting a crop of wheat or barley.

WHEAT.

Wheat is a leading staple, both as grain and as hay. It is grown as a winter and as a spring crop, maturing usually before the summer shortage of water occurs.

The chief variety grown is the Sonora wheat of this region, but certain Australian varieties have found favor, and effort is being made to import such new kinds as will make a better milling combination than does the Sonora alone. At present much wheat is imported from California by the large flouring mills in Phoenix, Tempe, Tucson, Solomonville, Safford, and Thatcher.

OTHER GRAINS AND FORAGES.

Sorghum has become one of our most important forage crops, not only because of its use for stock-feeding purposes, but because it thrives on land containing considerable alkali. Grown upon such lands, the alkali is partly taken up and removed with the crop, to this extent renovating and improving the soil for other crops. The Clubhead is the best and most commonly grown variety in the region.

Kaffir corn approaches sorghum in yield of forage, while Egyptian corn, an excellent drought resister, has proved to be a very promising source of grain. Cowpeas and rye may be grown experimentally, but are of minor value in this region. Oats are more grown than formerly, being, like wheat and barley, sown in with alfalfa for a first cutting of mixed hay.

ROOT CROPS.

Many of the important root crops thrive in Arizona. The common potato grows wild at higher altitudes within the Territory. In northern valleys heavy crops are grown by irrigation. In southern Arizona two crops may be grown, the principal one being planted in February and a less satisfactory one in August. Early Rose, Burpee's Extra Early, Early Andes, Bovee, and Triumph all do well, and from 4,000 to 5,000 pounds per acre is an ordinary crop.

Sweet potatoes and yams produce well in suitable soil, a specimen of the latter weighing 36¾ pounds from the upper Gila being on record.

Sugar beets yield a satisfactory tonnage of medium and sometimes excellent quality. The precautions necessary are early planting, not too light a soil, and careful cultivation and irrigation. The yields obtained during four years' experimental work by the experiment station varied from 4 to 18 tons per acre, containing from 11.1 to 18.6 per cent of sugar in the beets.

Field beets, carrots, parsnips, peanuts, radishes, and turnips are all grown with success.

VEGETABLES.

Green vegetables in unusual variety may be produced if proper attention is paid to the planting seasons. As mentioned above, there are two mild, temperate seasons in southern Arizona—one extending from January to June, the other from September well into November. Certain of the more quickly growing vegetables, therefore, may be made to produce both in the spring and the fall, this double season being recognized by the more experienced residents of this section. Asparagus, beans, cabbage, cauliflower, celery, table corn, cucumbers, eggplant, lettuce, melons, peas, spinach, squashes, tomatoes, and other varieties of vegetables in yearly increasing number are successfully grown.

FRUITS.

In northern Arizona and in certain of the higher valleys where the climate is temperate in character apples, cherries, pears, and peaches of excellent quality are grown, but only in small quantities, since the irrigated areas are small. Apricots, grapes, and raisins are shipped in considerable quantities from the Salt River Valley. Oranges and lemons of superior quality are produced in Salt River Valley and near Yuma. They have a commercial advantage of a season earlier than that of southern California, while in addition the fruit is uncommonly bright and attractive in appearance. This is due to the fact that im-

ported scale insects perish from the effects of the dry, hot atmosphere, leaving the fruit unmarred by their presence. Strawberries in skillful hands are a very profitable crop in southern Arizona, the entire crop being marketed in the Territory. Figs grow luxuriantly in southern Arizona, but require a constant and abundant supply of water in order to yield well. Almonds have been grown with varying success. The great drawback to their culture is the late spring frosts, which are likely to destroy the crop. For the past four years, however, the growers have in most instances succeeded in warding off disastrous frosts by smudging their orchards at critical times. During this time heavy crops of the highest market value have been secured, especially in the vicinity of Mesa City.

Olives are a promising crop in southern Arizona. This tree requires comparatively little water, and the scale, which is so abundant upon the tree in southern California, is not found upon it here. Experts state that the trees grown in Arizona are unusually bright and attractive in appearance and their fruit of good quality. The product of the olive tree also, either in the form of pickles or oil, may be held for the best market and is of small weight and bulk in comparison with its value, shipping charges being thus economized. It is not improbable that this fruit has a growing future in this region, since the demands for olive products is at present throughout the United States far in excess of the supply.

THE DATE PALM.

For six years past the Arizona station, in cooperation with the United States Department of Agriculture, has been engaged in the establishment of the most valuable Old-World varieties of date palms in Arizona. The Tempe date orchard, with 12 acres planted, now contains about 600 living trees, including 130 varieties. The oldest of them, planted in July, 1900, have produced three small crops of fruit, and this year (1905) about 20 varieties are in bearing. As these selected trees come into bearing under southwestern conditions it will be possible to judge of the varieties best suited to the climate and soil of the region as well as to our commercial and market requirements.

The Tempe orchard has already demonstrated the practicability of importing and planting choice varieties of date palms on a large scale, and operations there will serve as a guide in the selection of trees for the planting of commercial orchards in the future. Several kinds have already been found to successfully ripen their fruit in the Salt River Valley, while others have been observed not to mature their fruit with the heat there available. These later varieties may be found suitable for hotter districts, such as the Salton basin, while the earliest kinds may be found available for still cooler localities than near Tempe. It is now certain that the date palm is destined to be a valuable asset in the arid, subtropical valleys of the Southwest, producing a staple commercial fruit now entirely imported from foreign countries.

During the current year another orchard has been started near Yuma, in the alluvial bottom lands of the Colorado River. In this very favorable location it is not unlikely that the commercial outcome will be even better than at Tempe, the soil being unsurpassed in quality, water abundant, and the season longer than in the Salt River Valley.

It is of interest in this connection to note the points of resemblance between the Colorado and the Nile, whose valley has been the home of the date palm from time immemorial. Both rivers rise in distant mountainous countries, their lower courses traverse subtropical and nearly rainless deserts, and they empty into land-locked arms of the ocean at a little less than 32° north latitude. Like the Nile, the Colorado is subject to an annual summer flood, which overflows great areas of its alluvial border and delta lands. While climatic conditions along the Nile are somewhat less severe than in Lower Egypt, yet the two regions have a number of products in common. Among these are alfalfa, wheat, the sorghum corns, the date palm, fig, orange, olive, and pomegranate, cotton, melons, and sugar cane.

NATIONAL AND TERRITORIAL BANKS.

The prosperity prevailing in the Territory is well reflected in the bank statements printed below, which show the condition of the national and Territorial banks on June 30, 1905.

The total deposits in all the banks in the Territory on that date

aggregated $10,015,846.11, a gain of $947,736.48 over the same date last year.

The statement shows that in "cash on hand and due from other banks" the various institutions held an aggregate of $4,557,318.65, a gain of $552,575.82, as compared with the same date last year.

Loans and discounts aggregated $5,950,012.86, a gain of $305,110.06 for the year.

There are 11 national banks in the Territory, the aggregate capital, surplus, and undivided profits of which amount to $938,732.

There are 18 Territorial banks, with aggregate capital, surplus, and undivided profits amounting to $1,183,943.15.

The Territorial banks are regularly examined by the Territorial auditor, who is also bank comptroller, and diligent care is taken to see that each institution is conducted with due regard to safety. There was but 1 bank failure in the year, and that was a small institution, the failure of which was largely due to a lack of business experience on the part of the management.

Comparative statement, national banks.

	1904.	1905.
RESOURCES.		
Loans, discounts, and overdrafts	$2,374,490.76	$2,625,528.24
Stocks, securities, and claims	307,092.70	354,249.97
United States bonds and premiums	541,156.24	552,950.00
Cash and due from banks	2,020,730.90	2,186,848.06
United States redemption fund	10,070.00	20,187.50
Banking house, furniture, and fixtures	145,438.90	138,011.10
Total	5,398,979.50	5,877,774.87
LIABILITIES.		
Capital stock	605,000.00	580,000.00
Surplus and undivided profits	333,732.22	388,548.19
National-bank notes outstanding	401,256.32	425,086.73
Deposits	4,058,990.96	4,484,139.95
Total	5,398,979.50	5,877,774.87
AGGREGATE DEPOSITS IN BANKS.		
Territorial banks	5,009,118.67	5,531,706.16
National banks	4,058,990.96	4,484,139.95
Total	9,068,109.63	10,015,846.11

Comparative statement, Territorial banks.

	1904.	1905.
RESOURCES.		
Loans, discounts, and overdrafts	$3,270,411.04	$3,324,484.62
Stocks, securities, and claims	571,889.07	659,270.27
Real estate, furniture, and fixtures	315,763.46	361,423.83
Cash and due from banks	1,984,021.93	2,370,470.59
Total	6,142,085.50	6,715,649.31
LIABILITIES.		
Capital stock	768,310.00	755,200.00
Surplus and undivided profits	364,656.83	428,743.15
Deposits	5,009,118.67	5,531,706.16
Total	6,142,085.50	6,715,649.31

RAILROADS.

There are in Arizona 1,836.94 miles of railroad (exclusive of side tracks), operated by twenty companies. Many of the companies are merely subsidiary to parent companies, however, and most of the lines may be classified in three groups, namely, the Santa Fe system, the Southern Pacific system, and the El Paso and Southwestern system. One thousand two hundred and seventy-eight and fifty-four one-hundredths miles are taxed at varying valuations per mile, and 558.40 miles are exempt from taxation for varying periods, as explained in my remarks on taxation.

The new construction of the past year, with the construction contemplated, is of considerable importance. The Phoenix and Eastern has been completed to a point 95 miles east of Phoenix, and will ultimately be connected with some point on the Santa Fe system in New Mexico. The Arizona and California has been completed to a point 49 miles west of Wickenburg, and will be connected with the Santa Fe main line at some point in California. The Phoenix and Eastern and the Arizona and California, with the track of the Santa Fe, Prescott and Phoenix between Phoenix and Wickenburg (all subsidiary lines of the Santa Fe), will, it is claimed, form part of a new transcontinental line of the Santa Fe designed to traverse central Arizona from east to west. The new line will have many advantages over the old line (the Santa Fe Pacific), which runs from east to west through northern Arizona. It will avoid the heavy grades of the northern line and will materially shorten the distance between Kansas City and Los Angeles.

Of the new construction by the Southern Pacific system, the Arizona Eastern Railway, incorporated to build from Yuma, Ariz., to Lordsburg, N. Mex., is popularly regarded as proof that the Southern Pacific, prompted, probably, by the same considerations as the Santa Fe, intends to avoid mountain grades by constructing a new through line across the Territory from east to west. Construction on the Arizona Eastern was begun near Kelvin, Ariz., on the Gila River, in April, 1904, and has been in progress ever since. Several miles have been graded. The advantage of the Arizona Eastern as a main line of the Southern Pacific system lies in the fact that it will follow the valleys of the Gila and Salt rivers via Phoenix, and thereby avoid the heavy grades of the old line.

Seventeen miles of the Arizona and Colorado Railroad (also a part of the Southern Pacific system) have been completed from Cochise to Pearce, and surveys are in progress for an extension to Durango, Colo.

Both the Santa Fe and Southern Pacific have expended large sums in betterments during the year, such as replacing track with heavier rails, the construction of steel and cement bridges, etc.

The following table presents some railway statistics in graphic form:

Railroads in operation in Arizona.

Name of road.	Mileage in operation.	Assessed valuation per mile.	Mileage exempt from taxation.
Maricopa and Phoenix and Salt River Valley	34.93	$4,669.564	
Santa Fe, Prescott and Phoenix	194		194.
Santa Fe Pacific	386.734	175.00	
Grand Canyon	64		64
Southern Pacific	392.50	7,125.45	
New Mexico and Arizona	89	4,249.80	
El Paso and Southwestern	128.52	6,750.00	
Saginaw and Manistee	14	1,054.16	
United Verde and Pacific	27.30	4,029.304	
Central Arizona	11	2,000.00	
Gila Valley, Globe and Northern	124.30	3,128.70	
Arizona and New Mexico	40	5,504.50	
Morenci Southern	18	3,655.55	
Arizona and Colorado	17		17
Phoenix and Eastern	94.80		94.80
Arizona and California	49.20		49.20
Prescott and Eastern	61.90		61.90
Arizona and Utah	54		54
Cananea, Yaqui River and Pacific	.50		.50
Arizona Southern	23		23
Arizona Copper Co	8	2,500.00	
Total	1,896.94		558.40

LEGISLATION.

During the fiscal year ending June 30, 1905, the legislative assembly was in biennial session from the 18th day of January, 1905, to and including the 16th day of March, 1905, making a period of sixty days. This assembly was composed of the council and the house of representatives. The council consisted of 12 members, being 1 from each of the counties of Apache, Cochise, Coconino, Gila, Graham, Mohave, Maricopa, Navajo, Pinal, Yavapai, and Yuma, and 1 joint councilman from the counties of Pima and Santa Cruz. There were 24 members of the house of representatives, apportioned among the various counties as follows: Apache, 1; Cochise, 3; Coconino, 1; Gila, 1; Graham, 2; Mohave, 1; Navajo, 1; Maricopa, 4; Pima, 3; Pinal, 2; Santa Cruz, 1; Yuma, 1; Yavapai, 3.

As has become the custom, the assembly began its session with the creation of a uselessly large number of clerkships, and their employment continued during the term. The employment of these supernumerary clerks was not determined by fitness. The result was that a great proportion of the clerks and attachés were wholly incompetent. The appropriation made necessary for the payment of these extra and supernumerary attachés for the session of sixty days was about $15,000. This was in excess of the amount appropriated by Congress for the compensation of clerks and other attachés. The number of attachés was considerably in excess of the number of members of the assembly, and the compensation paid them was greater, in the aggregate, than that paid to the members.

The session was not productive of any legislation changing the general policy of the government of the Territory. There were introduced during the session 281 bills, of which 69 became laws. Among the bills which became laws were:

An act to authorize Apache County to issue $15,000 of its bonds for the erection of a county court-house (ch. 6); an act to author-

ize Gila County to issue $40,000 of its bonds for the erection of a county court-house (ch. 9); an act authorizing Mohave County to issue $20,000 of its bonds for the erection of a county court-house (ch. 57); an act to authorize Pinal County to issue $19,000 of its bonds, with the proceeds of which to repair the wagon bridge across the Gila River at Florence (ch. 58); an act authorizing the Territory to issue $40,000 of its bonds, with the proceeds of which to erect additional buildings and to equip them at the Territorial prison (ch. 60); an act authorizing Mohave County to issue $10,000 of its bonds, with the proceeds of which to construct and furnish a county jail (ch. 61).

These acts authorize in the aggregate the issuance of $104,000 of county bonds and $40,000 of Territorial bonds, making together $144,000.

The office of public examiner was created by chapter 40. This officer, it is provided, shall be appointed by the governor, with the advice and consent of the legislative council. He is required to be an accountant and an expert in the theory and practice of bookkeeping. His term of office is fixed at two years, and his compensation at $2,400 per year, and provision is made for his traveling and other expenses in the performance of the duties of his office. His duties are defined by the act to be, generally, to order and enforce a correct and as far as practicable a uniform system of bookkeeping by county treasurers and other officers; to expose false or erroneous systems of accounts; to inquire into the solvency of sureties upon all official bonds, and to reject insufficient ones. He is required to visit personally, at least twice a year and without previous notice to them, the various county offices and make a thorough investigation of the books, accounts, and vouchers of the various offices in detail. He is required to make reports of his investigations to the governor. Upon reports made to him by the public examiner the governor may cause the result of the investigations to be made public, and take such other action for the public safety as the exigency may demand, and if he deem that the public interest require it he may suspend any officer from the further performance of his duties until an examination may be had or such security obtained as may be demanded for the prompt protection of the public interests.

This law has been in operation since the 10th of March, 1905. Already beneficent results are observable in securing closer attention in detail to the financial affairs of the various counties. The incument of the office is one of the best accountants in the Territory and has large experience in the conduct of public offices. I am very pleased to state that so far his investigations have resulted in little other criticism of the various county officers than careless bookkeeping, and some practices in disbursing public money not authorized by law, but which have so long been done as to have seemed to have had the sanction of long custom. A uniform system of public accounts is being rapidly adopted and put in use, and greater care is being taken in the allowance and payment of claims as county charges. I am greatly gratified by the proof, afforded by the examiner's reports, of the almost universal probity and integrity of the officers of this Territory.

Chapter 46 of the session laws appropriates $10,000 for the erection of a "Captain O'Neill Rough Rider Monument" at Prescott. Capt.

William O. O'Neill, affectionately known throughout Arizona as "Bucky" O'Neill, was the commander of a troop of Rough Riders at San Juan, and there, while in the fearless, almost reckless, discharge of his duty, was killed by a Spanish bullet.

Chapter 51 of the laws of 1905 is a compilation and revision, and in some respects an amendment, of the laws of the Territory relating to range animals. The law provides for the appointment of a "live-stock sanitary board," to consist of three members, in whom is largely vested the enforcement of the regulations concerning the health and protection of live stock grazing upon the open ranges. Animals permitted to run upon the ranges are required to be branded with a brand which has been adopted by the owner and recorded. Provision is made for the seizure of animals running upon the ranges which are not thus branded, or which have upon them mutilated or obliterated brands. The law is not a new one, but a compilation and revision of former acts, with some amendments found by experience to be necessary. The law is working very effectively for the protection of range live stock both against disease and theft.

Chapter 52 is amendatory of older statutes upon the subject of fencing. It defines what shall constitute a "lawful fence." It is further provided that in certain districts, upon proper application of a requisite number of taxpayers, no fence shall be required. In other districts the owner of lands is without remedy for damages occasioned by trespassing live stock unless his lands be inclosed by a "lawful fence."

Chapter 56 is amendatory of former statutes relative to the safe-keeping by the Territorial and the various county treasurers of public funds. By this law the Territorial treasurer is required to deposit the Teritorial funds, and the county treasurers are required to deposit the county funds, in banks upon their giving satisfactory bonds for their security and payment of not less than 1 per cent per annum, calculated on daily balances and credited monthly. It is the purpose of the administration to distribute the Territorial funds among the various banks in the Territory, with a view, as nearly as it may be practicable, to the return of the money to the localities whence it was withdrawn for the payment of taxes. The average amount of Territorial funds in the treasury is approximately $150,000.

Chapter 64 provides for the establishment of a Territorial fair. The act appropriates $15,000 for the construction of buildings and $7,500 per annum for maintenance, etc. The act provides that a fair ground, with race tracks, stables, stalls, amphitheaters, etc., shall be provided for the holding of the fair, without cost to the Territory, except a nominal rent, not to exceed $10 per year. A corporation, composed chiefly of citizens of Phoenix, has been organized, known as the Arizona Fair Association, which has purchased grounds near Phoenix and is now engaged in putting them in condition. The cost of the grounds and fitting them for the purposes of the fair will approximate $30,000. The expenditures of the fair association are in addition to that authorized by this act.

Chapter 68 regulates primary elections. It provides that all political party conventions for nominating candidates for any city, county, or precinct election shall be held in conformity with that law; that not more than sixty nor less than thirty days before an election pri-

maries shall be held for the selection of delegates to the different party conventions. These primaries are required to be held upon the same day and in the same room, where separate boxes, one for the voters of each party, shall be provided. The time and place of holding the primaries is to be fixed, in the case of city election, by the city council, and in the case of county elections by the board of supervisors of the county. Public notices of the time and places of holding the primaries are required to be given. Every political party entitled to nominate candidates for office shall hold nominating conventions. Such conventions shall consist of delegates elected at the primaries and shall all be held upon the same day. The time and place are to be fixed by the city council in the case of a city election, and by the board of supervisors in the case of a county or precinct election. Conventions must be held not more than forty nor less than twenty days before the regular election. The city council in the case of the city, and the board of supervisors in the case of a county or precinct election, are required to appoint a primary election board to consist of one inspector, two judges, and two clerks for each political party, to be selected from the political party whose primary they preside over. The clerks of all primary elections shall keep, in duplicate, lists of all voters at the primary election, one of which lists shall be filed with the clerk of the board of supervisors (in county elections) or the city clerk (in city elections); the other of the duplicate lists is to be retained by the inspector, open to inspection, for at least six months. The qualifications for a voter at a primary are prescribed to be:

1. That he is a qualified elector of the city ward or precinct; and
2. That he is a member of the political party holding the primary, and that he expects to support the regular ticket of that party at the next general or special election.

Penalties are provided for unlawful voting.

There are a number of acts prescribing police regulations; as, to protect hotel keepers against persons not paying their bills; forbidding directors and officers of savings banks and loan associations to borrow money of the bank except upon real estate having a market value of at least one-third more than the loan, or upon stock of the bank or association more than its surrender value; defining larceny; amending law as to holidays; protecting children against vicious or negligent parents, and authorizing, upon prescribed proceedings, the removal of child to other care and custody; providing that a distinct act of taking shall not be necessary to constitute embezzlement; to prohibit saloons and other like resorts within a radius of 4,000 feet of the Territorial university; to protect game; to punish persons having acids, steel filings, etc., in their possession with malicious intent to use them for injuring persons or machinery; providing bounties for scalps of certain wild animals; to prohibit persons not members of secret or benevolent orders from wearing insignia; to prohibit killing introduced pheasants until 1911; prohibiting sale of cigars, cigarettes, cigarette papers, smoking or chewing tobacco to any minor under the age of 16 years; prohibiting dogs from running at large in certain localities without being tagged; to prevent the use of railway track as a way along which to propel railroad bicycles, etc., without consent of railroad company; to prohibit tres-

passing by sheep; providing penalties for malicious injury to bridges, telegraphs, etc.

There was also an act transferring the management and control of the industrial school from the board of trustees to the board of control.

The appropriations made by the legislature are as follows:

For expenses of legislative committees visiting public institutions	$700.00
For telegraphing on statehood matters	50.00
For additional copies of governor's report of 1904	150.00
To discharge certificates of indebtedness of Tempe Normal School	4,500.06
To discharge certificates of indebtedness of Northern Arizona Normal School	2,872.17
For printing additional copies of the laws of 1903	350.00
For postage stamps and newspaper wrappers for members of legislature	380.00
For the relief of F. C. Stein	446.20
Rebuilding schoolhouse near Clifton, damaged by flood	3,000.00
For erection of Captain O'Neill Rough Rider monument	10,000.00
For various improvements at the university	20,000.00
For Territorial fair	30,000.00
For relief of Mrs. Aceana Tafolla, widow of a deceased ranger	300.00
For salary of Territorial auditor for two years	4,800.00
For salary Territorial treasurer, two years	5,000.00
For salary attorney-general, two years	3,000.00
For salary assistant Territorial librarian, two years	1,200.00
Private secretary to the governor, two years	3,600.00
Auditor's clerk, two years	3,600.00
Superintendent public instruction, two years	3,600.00
Superintendent Territorial prison, two years	6,000.00
Five district judges, two years	15,000.00
For expense office of board of control	500.00
For rewards for apprehension of fugitives from justice	3,500.00
For newspaper subscriptions for Territorial library	300.00
To repay Jean Allison money expended by him on account of game commission	222.25
For blanks and stationery for auditor's office	2,000.00
For maintenance of Territorial museum	200.00
For salary deputy clerk of supreme court, two years	1,800.00
For insurance on Territorial library	500.00
Office contingencies of governor, two years	1,000.00
For filing cases, etc., for office of auditor	700.00
For office expense of clerk of supreme court	200.00
To pay Southern Pacific Railroad for transportation of militia	993.87
To reimburse Captain Mossman of the rangers, expenses by him	414.15
For use of Territorial library	1,500.00
For improvements to industrial school	7,500.00
To pay extra clerical service at session of legislature	13,170.00
To pay chief clerk of house and council for revising journals for publication	200.00
For printing reports of Territorial officers	2,000.00
For printing rules of legislative assembly	50.00
National Guard expenses at encampment	169.29
Telegraphing by legislature	163.64
For care of capital building and grounds	4,000.00
For extra compensation to attachés of legislative session	1,140.00
For printing proceedings of legislature in newspapers	750.00
For rent of typewriters for use of committee clerks	167.50
For Arizona Pioneer Historical Association	1,500.00
Salary public examiner	5,500.00
To pay expenses of office of public examiner	2,750.00
Making a total of specific appropriations of	175,915.04

In addition to the above specific appropriations, tax levies were made for various purposes, a list of which, together with the rate of the

levy and the estimated amount that will be realized therefrom, is as follows:

For dormitory at Northern Arizona Normal School, 1½ cents on each $100 of valuation	$10,000
Tempe Normal, for maintenance, 1½ cents	10,000
Tempe Normal, for building dining hall, training school, and other improvements, 5½ cents	55,000
Making a total of (estimated)	75,000

There are, it should be understood, certain other fixed levies provided by various older statutes to raise revenues for the maintenance of the various public institutions.

PENAL INSTITUTIONS.

The Territory has two penal institutions—the Territorial prison at Yuma and the industrial reform school at Benson.

TERRITORIAL PRISON.

In the Territorial prison at the beginning of the fiscal year, July 1, 1904, there were in confinement 294 prisoners. At the close of the year there were 329 prisoners, showing an increase of 35 for the period covered by this report, as against 10 for the preceding year.

It is of interest to note the nationality of the convicts, as shown by the table below. It is a rule of the prison to classify Caucasians in two groups—"whites" and "Mexicans."

Convicts, by nationalities.

	Whites.	Mexicans.	Indians.	Negroes.	Chinamen.
In confinement July 1, 1904	122	144	13	13	1
Received during the year	71	76	3	7	1
Discharged during the year	60	49	4	9	1
In confinement June 30, 1905	133	171	12	11	1

There is but one woman convict.

Nativity of the prisoners.

Mexico	137	Michigan	3
Arizona (including 25 Mexicans, 12 Indians, and 13 whites)	50	Arkansas	3
New Mexico	9	Kansas	3
Texas	18	New York	2
Tennessee	3	Utah	5
Massachusetts	3	South Carolina	1
Mississippi	1	Iowa	2
Pennsylvania	10	Idaho	1
California	24	Minnesota	2
Maryland	2	Indiana	2
Kentucky	4	Oregon	2
Missouri	8	Sweden	1
Nevada	3	Germany	3
Illinois	8	China	1
Wisconsin	2	Ireland	3
Georgia	3	Scotland	1
Colorado	2	Canada	3
Louisiana	2	Total	329
Maine	2		

The prisoners received during the year were from the following counties:

Cochise	45	Mohave	4
Yavapai	23	Navajo	1
Santa Cruz	4	Pima	12
Coconino	4	Pinal	8
Apache	1	Yuma	7
Graham	13	Gila	13
Maricopa	16		

There were 12 United States prisoners received, 2 of whom were from the first judicial district, 8 from the second, and 2 from the third.

During the year 124 prisoners were discharged, as noted below.

By expiration of sentence	96	By order of supreme court	2
Pardoned to restore citizenship	10	Executed	1
Pardoned	1		
Paroled	8	Total	124
Died	6		

The average number of convicts in the prison during the year was 318$\frac{9}{10}$.

The prison is the most expensive of the Territory's public institutions. The gross expense for the year was $54,388.68. Of this sum $30,465.75 went for salaries and wages and $23,913.93 for maintenance and repairs. The total earnings and receipts amounted to $5,461.29, making the total net cost of the institution for the year $48,927.39. The gross cost per prisoner for the year was $170.46; the net cost $153.34. The average daily gross cost per prisoner for the year was $0.467; the average net cost was $0.42. This was a reduction of $0.03 per capita, as compared with the preceding year.

A serious problem in Arizona, as in all States, is that of providing employment for the convicts. While all of the prisoners are expected to perform hard labor, the fact is, unfortunately, that it is impossible to find work for them to do at all times. No manufacturing is carried on, and aside from constructive work about the prison the labor is confined chiefly to breaking rock. For the crushed rock there is a limited market at Yuma. The late legislature attempted to solve the problem by passing a bill providing for the employment of the convicts in the construction of public highways in the Territory. The provisions contained in the bill were impracticable, however, for the reason that it was required that the prisoners should be employed in each county in proportion to the number of convicts in the prison from each county. There being thirteen counties in the Territory, this would have required the maintenance of at least thirteen convict camps, many of them so small that the cost of maintenance and safe custody would have been prohibitive. For this reason the bill failed to receive executive approval. It is to be hoped, however, that the next legislature will enact such legislation as will enable the board of control to provide the necessary employment for the convicts.

At considerable expense a prison farm was established several years ago, it being contemplated that during the greater part of the year there would be work for the convicts on the farm, but experience has demonstrated that the farm is of little utility. It is annually overflowed by the Colorado River. The failure of the Territory to

provide "hard labor" for the prisoners has a strong tendency, I am convinced, to lessen the terrors of prison life for a certain class of lawbreakers.

The sanitary conditions at the prison are good, and that, with the healthful climate, accounts for the fact that the health of the prisoners in general is excellent. There were but six deaths in the prison during the year. Three of these were from consumption, one from pneumonia, and two from general debility.

TERRITORIAL INDUSTRIAL SCHOOL.

The industrial (reform) school is maintained at Benson, in Cochise County, for criminal and incorrigible youth. The institution was opened in December, 1903.

On the 30th day of June, 1905, there were 43 boys and 2 girls undergoing sentence at the institution.

The law provides for the commitment of two classes of offenders—

1. All infants between the ages of 8 and 16 years who are proved guilty of an offense otherwise punishable by imprisonment in the county jail or Territorial prison.

2. Infants committed by any judge of the district court or probate court on the complaint in writing, and due proof thereof by the parent or guardian of such infant that, by reason of incorrigibility or vicious conduct, such infant has rendered his control beyond the power of such parent or guardian, making it requisite that from a regard for the future welfare of such infant and for the protection of society he be placed in the industrial school.

Of the total number of inmates at this time, at least one-half have been committed to the institution on the complaint of parents or guardians. This feature of the law, I am convinced, sets a premium upon parental negligence. Negligent and shiftless parents, finding that on a complaint from them that their children are incorrigible the Territory will assume the responsibility and expense of maintenance and education of such children, are too willing to shift all responsibility upon the Territory. The next legislature undoubtedly will take cognizance of this unsatisfactory state of affairs.

The cost of maintaining the industrial school has been an expensive feature of the Territorial government, and with a view to lessening the expense the late legislature enacted a law abolishing the board then governing the institution and placed the school in the hands of the board of control. It is hoped that the new policy will result in more economical management.

The total cost of maintenance for the last fiscal year was $24,639.33.

In establishing the school the legislature acted in conformity with a healthy public sentiment. It is undoubtedly unwise for society to place youthful offenders in the company of older criminals in the jails or the penitentiary, and a reform school properly conducted will undoubtedly have a good effect in reforming wayward youth. But as already pointed out, the law must be amended in order to safeguard the Territory from imposition by parents who are in most cases inexcusably and perhaps criminally negligent of their duties.

At the institution regular hours are observed. Inmates attend school one half of each day and labor the other half. A competent instructor is employed. The course of study includes reading, writ-

ing, spelling, arithmetic, geography, and a speaking knowledge of the English language. English alone is spoken, except to inmates who understand Spanish only. Spanish is spoken only until the children have learned to express themselves in English.

This rule was found to be imperative in view of the fact that a large majority of the children committed to the institution are of Mexican parentage.

THE COURTS AND LITIGATION.

There are five different systems of courts in the Territory, viz: The supreme court, the district courts, the probate courts, the courts of the justices of the peace, and municipal courts in the various cities and towns for the trial of offenses against municipal ordinances.

The supreme court of the Territory consists of a chief justice and four associate justices. These justices are appointed by the President of the United States. The jurisdiction of the supreme court is chiefly appellate, having original jurisdiction in habeas corpus, mandamus, etc. Appeals lie to it from the various district courts. The district courts are created by local statutes. The Territory is divided into five judicial districts, to each of which is assigned one of the justices of the supreme court, who presides in the district courts of the district to which he is assigned. A district court is provided for in each county wherein stated terms are fixed by law. Under the organic act the district court is vested with the same jurisdiction in all cases arising under the Constitution and laws of the United States as is vested in the circuit and district courts of the United States. This jurisdiction is exercised at only one designated place in each of the five districts. The district court established by the local legislature is a court of general civil and criminal jurisdiction. All distinction in form of procedure between suits in equity and actions at law are abolished by statute, and a general statutory procedure is prescribed. The district courts have original jurisdiction in civil cases where the amount involved exceeds $100. They have exclusive original jurisdiction of all crimes amounting to felony and of misdemeanors where the punishment exceeds a fine of $300 or imprisonment in the county jail exceeds six months, and jurisdiction concurrent with that of justices of the peace in certain misdemeanors. The district courts have also appellate jurisdiction of certain cases appealed from the probate, justice, and city courts.

Probate courts have the general jurisdiction that their name implies. The judges are elective.

Justices of the peace are elective and have civil jurisdiction for money demands not exceeding $300, and of misdemanors.

The common-law right of trial by jury in both civil and criminal cases prevails.

The common law constitutes the basis of our jurisprudence. There are, of course, many statutory modifications of the common law. We have a civil code of procedure, and crimes, although their definition closely follows the common law, are all statutory.

The community rule of property, of both real and personal property, prevails—that is, husband and wife are deemed common owners of all property acquired by either during their marriage, except such as is acquired by gift, devise, or descent.

Questions arising under the public-land laws, mines, and irrigation figure prominently in the litigation in the Territory.

Statutes of limitation are, as a rule, short.

The personnel of the bar of the Territory ranks well in point of ability. Good law libraries are found in most of the towns. The law department of the Territorial library has complete sets of all the State and Territorial law reports.

I have caused to be tabulated some data relative to this subject, which follows:

Members of the bar.

County.	Number.	County.	Number.
Apache	4	Pima	47
Cochise	48	Pinal	3
Coconino	8	Santa Cruz	9
Gila	10	Yavapai	22
Graham	16	Yuma	5
Maricopa	55		
Mohave	8	Total	234
Navajo	4		

Business in the supreme court of the Territory.

Nature of action.	Cases on calendar June 30, 1904.	Cases filed during the year.	Cases disposed of during the year.	Cases affirmed.	Cases reversed.	Cases dismissed.	Habeas corpus writs dismissed or denied.	Cases on calendar June 30, 1905.
United States cases:								
Civil	1	3	2	1	1			2
Criminal		1	1	1				
Territorial cases:								
Civil	19	43	35	20	6	9		27
Criminal	6	35	40	18	3	1	18	1

Business in the district courts, by counties.

County.	Civil cases on calendar July 1, 1904.	Civil cases filed during the year.	Civil cases disposed of during year.	Felony indictments returned.	Felony trials.	Felony convictions.
Apache	26	26	24	8	1	1
Cochise	202	427	221	57	65	60
Coconino	35	35	35	50	24	12
Gila	36	84	47	28	19	18
Graham	198	112	269	25	20	17
Maricopa	121	644	339	29	17	17
Mohave	22	56	53	5	5	4
Navajo	8	4	4	4	2	1
Pima	117	343	334	33	24	24
Pinal	13	23	15	4	6	6
Santa Cruz	27	95	46	27	8	7
Yavapai	192	267	225	39	24	24
Yuma	38	45	45	23	16	15

LABOR.

The chief demand for skilled labor is in the mines and smelters and on the railroads; for unskilled labor, around the mines and in railroad construction work. There was a good demand for all classes of

labor throughout the year. Wages and hours were satisfactory, as a rule, and there were no strikes of importance. The figures in the following table show the average wages paid in the various lines of industry:

Occupation.	Wages.	Hours.	Occupation.	Wages.	Hours.
Mine labor, underground:	*Per day.*		Smelter—Continued.	*Per day.*	
Machine men	$3.50 to $4.50	8	Car men	$2.75	10
Hand miners	3.00 to 3.25	8	General labor	2.25 to 3.00	8 to 12
Trammers	3.00	8	Railroad:	*Per month.*	
Foremen	5.00	12	Engineers	100.00 to 200.00	.....
Shift bosses	4.00	12	Conductors	100.00 to 150.00	.....
Timbermen	4.00	10	Firemen	75.00 to 100.00	.....
Mine labor, surface:			Brakemen	80.00 to 100.00	.....
Blacksmiths	4.00	10		*Per day.*	
Machinists	4.00	10	Bridge men	2.75 to 3.50	10
Blacksmiths' helpers	3.00	10	Blacksmiths	4.00	.....
Hoist engineers	4.00	10	Boiler makers	4.00	10
Other engineers	4.00	10	Section hands	1.50	10
Firemen	3.00	12	Laborers[a]	1.00 to 1.50	10
Carpenters	4.00	10	Laborers[b]	2.00 to 2.50	10
Electricians	4.00	10	Mechanics	3.00 to 3.50	10
General labor, common	2.00 to 2.50	10	Foremen	3.00 to 5.00	10
Smelter:			Section work	1.75 to 2.00	10
Foremen	5.00	12	Miscellaneous:		
Shift bosses	4.00	12	Linotype operators	4.50	8
Engineers	5.00	8	Compositors, day	3.00	8
Skimmers and tappers	4.00	12	Compositors, night	3.50	8
Swampers and ladle men	3.00	12	Pressmen	4.00	8
Motormen	3.50	12		*Per month.*	
Motor brakemen	3.00	10	Clerks, bookkeepers, etc	50.00 to 100.00	.....
			Farm hands	30.00	.....
			Domestic servants	15.00 to 35.00	.....

[a] Mexican and negro. [b] White.

CORPORATIONS.

A subject to which I have to refer, and with the most reluctance, is the law of the Territory relating to general corporations and its operation.

The organic act provides that the legislature may by general law provide for the organization of corporations for "mining, manufacturing, and other industrial pursuits, and for conducting the business of insurance, banks of discount and deposit (but not of issue), loan, trust, and guaranty associations, and for the construction and operation of railroads, wagon roads, irrigating ditches, and the colonization and improvement of lands in connection therewith, or for colleges, seminaries, churches, libraries, or any other benevolent, charitable, or scientific association." (Sec. 1889, R. S. U. S.)

This seems to be a specification of the objects for which the Territorial legislature may authorize the organization of corporations, although it is a very comprehensive one. Being, however, a specification, it would seem to involve prohibition of the organization of corporations for purposes not specified. The local statute, however, provides that corporations may be organized "for the transaction of any lawful business." The provisions of the organic act in its present form were adopted in 1886 (sec. 5, chap. 818, 49th Cong., 1st sess., July 30, 1886). The history of the legislation of Congress shows that from time to time there has been an increase in the number of purposes for which the organization of corporations may be authorized,

but there has always been a specification of those purposes, leading us to the inference that there was a limitation intended. That Congress did not intend that corporations should be authorized by Territorial legislation for the transaction of any (every) lawful business is clear. That the Territorial legislature has exceeded its powers is equally clear, and that sooner or later this will lead to confusion and possibly serious loss seems evident.

The Territorial statute on this subject imposes probably less of restraint upon those proposing to incorporate under it, and upon the corporation itself, than that of any State or Territory in the Union. There are no provisions that even suggest that they are devised to compel honesty in the administration of corporate affairs, or the discharge of any duty to the public. The corporation may begin business without the payment of a dollar of its capital stock. There is no provision for publicity of the names of the stockholders, the amount of their subscriptions, or the amount of their subscriptions they may have paid, and stockholders may, by the simple insertion of that provision in the articles of incorporation, exempt themselves from all liability for the corporate debts. These things have been so advertised about the country that hundreds and thousands of corporations have been organized by nonresidents of the Territory under the provisions of the laws of Arizona. I can not say, of course, what proportion of these corporations were not organized in good faith and are mere "fake" corporations, without business, property, or credit, but that there are hundreds of them I can safely say. That this state of things must injuriously affect the credit of Arizona must be apparent.

It so little comports with the dignity and self-respect of a people proud of their ability and right of self-government that it seems strange that such legislation should have found its way into our statutes.

That it was promoted by persons who saw in it a profitable field for fees in the business of organizing corporations seems hardly sufficient to excuse the heedlessness of the legislators.

The specious argument was used that the fees exacted could be made an important source of revenue to the Territory, and this may account for it.

Since the enactment of the law, in September, 1901, to the present time (less than three years) there have been incorporated under it 7,187 corporations, having the startling aggregate capitalization of $24,289,182,000.

Statement of the corporation fees received by the Territorial auditor and covered into the treasury.

1904—		1905—	
July	$2,370.75	February	$2,960.80
August	2,383.90	March	4,509.00
September	2,810.10	April	4,014.55
October	3,110.40	May	4,732.30
November	2,586.90	June	3,577.80
December	2,995.70		
1905—		Total	38,674.10
January	2,621.90		

THE INDIANS.

According to the census of 1900 there were 26,480 Indians in Arizona. It is not believed that the Indian population has increased materially, if at all, since that date. There have been no serious epidemics among them, but it is noticeable that changed conditions in living, wrought by civilization—the substitution of houses for life in the open air and "the white man's clothing"—have subjected them to the white man's diseases.

Indian outbreaks in Arizona belong to the past. All of the tribes are peaceable and anxious to remain so. The Apaches, so long considered incorrigible, are content to remain on their reservations in peace, and many of them are proving to be good laborers on railroads and other public works.

It is but seldom that an Indian commits a felony, and there are but few Indians in the Territorial prison. The strongest civilizing influences are railroads and the Indian schools. From year to year there is a gratifying change in the attitude of the older Indians toward the schools. It was but a few years ago that in many cases children had to be taken from the reservations by force for education in the schools, but that is no longer the case. It is scarcely possible to exaggerate the good that is being accomplished by the Indian schools in breaking down the opposition of the Indians to the ways of civilization.

In order, however, to achieve the greatest good from the admirable system of Indian education, the Government should follow the graduates from the schools with close attention. Instead of permitting them to return to their reservations to take up a life of idleness, employment should be provided for all Indians who have completed a course at the schools. Such an undertaking would be easy if the Government would provide ample water for the irrigation of Indian farms.

On the Gila River Reservation there is land enough to provide an abundance of farms, and water storage on the Gila would solve the question of water supply. The construction of the projected San Carlos reservoir would be of incalculable benefit to the Indians, and from an economic standpoint it would prove an excellent investment for the Government.

The detailed reports of the Indian agents and superintendents of Indian schools in the Territory will be found embodied in the annual report of the Commissioner of Indian Affairs.

ARIZONA FORESTS.

The area of Arizona is so vast and the proportion of desert is so great that the Territory's wealth of forests is but imperfectly appreciated. Probably the largest unbroken forest in the world lies within the San Francisco Mountains and Black Mesa Forest reserves, in Coconino, Yavapai, Navajo, and Apache counties. Its area is estimated to be more than 6,000 square miles. This timber is usually found at an altitude between 5,000 and 7,500 feet. The most valuable timber (pine) is found within the reserves mentioned,

but the timbered area of the northern portion of the Territory stretches, with more or less extended interruptions, to and beyond the Grand Canyon of the Colorado to the north, to Bill Williams Mountain in the west, and southward to the great rim where the Colorado plateau breaks down to the southern plains. Easterly, in the higher ranges of the White Mountains, there is a dense growth of magnificent trees. Long arms of forest areas also exist in the mountains immediately south of the Colorado plateau. The ranges in the southeastern portion of the Territory are also timbered above the altitude of 7,500 feet. In the Mogollon Mountains, in Coconino and Gila counties, in addition to the yellow pine, there are large bodies of oak timber suitable for the manufacture of farm machinery, wagons, etc., and for finishing lumber, but until penetrated by railroads the region will be practically inaccessible.

In pursuance of the wise policy of protecting the timber, the Government has established nine forest reserves within the Territory. These reserves embrace an area of 7,242,170 acres.

PRODUCTION OF LUMBER.

The production of lumber on a large scale is confined to Coconino County, the headquarters of the Arizona Lumber and Timber Company and the Saginaw and Manistee Lumber Company being at Flagstaff and Williams, respectively. Each company operates a logging railroad and possesses all modern facilities for producing lumber ready for market.

The Arizona Lumber Company reports to me that its production of lumber for the fiscal year ended June 30, 1905, amounted to 30,000,000 feet. This product was not equal in volume to that of the previous twelve months by nearly 10,000,000 feet, because of the interruption of operations on account of heavy rains at various times during the season, and the company was compelled to suspend operations almost entirely during the first two months of this year on account of wet-weather conditions. The plant runs day and night when the weather permits. The Saginaw and Manistee Lumber Company reports that its production for the year was 22,500,000 feet of lumber. This company also found its operations interrupted by rains at various times during the year.

Both companies report an active demand for their product. The demand for Arizona lumber increases from year to year by reason of the depletion of the white-pine forests in the lumber States of the East and about the Great Lakes. This, coupled with the steadily increasing demand for white pine, has enlarged the field so that shipments are now made from Arizona to Colorado, Kansas, Nebraska, parts of Texas and Oklahoma, and even as far as Chicago and New York, although the quantity going to the last-named points is relatively small by reason of the longer haul and the extent of the market west of the Mississippi River. Both companies report an increased volume of trade in Arizona, which indicates a steady increase in the demand of the southwestern country, and a disposition to use the home product in preference to lumber from elsewhere. Until recent years nearly all of the lumber used in the Territory was shipped from Pacific coast points—the lumber districts of Oregon and Washington.

THE NATIONAL GUARD.

Under the encouragement given by the Dick bill, which forms the citizen soldiery of the nation into virtually a reserve of the Regular Army, there has been decided advancement in the National Guard of Arizona. According to the roster of organized militia submitted to the Military Secretary early this year, the guard has a total strength of 435. This is comprised into one regiment of six companies, with two added troops of dismounted cavalry. The strength is distributed as follows: Regimental headquarters, Phoenix; A, Thatcher; B, Phoenix; C, Tempe; D, Mesa; H, Yuma; I, Flagstaff; First Troop, Nogales; Second Troop, Morenci. According to the Arizona statutes the cadet company of the normal school at Tempe and the cadet battalion of the University of Arizona at Tucson are included as a part of the National Guard of Arizona, though not available for active service. An officer of the Regular Army is detailed for service with the university battalion.

The adjutant-general of the Territory, Col. B. W. Leavell, also occupies the position of officer detailed by the War Department, he being a retired officer of the Regular Army with rank of major.

The guard has become well equipped during the past two years, the intention being that it shall lack in nothing considered necessary in the Regular Army. It is armed with Krag-Jörgensen rifles and gatling guns.

The Territory has been remarkably free from disorders calling for the assistance of the National Guard, the only trouble of late years having been at Morenci, in June, 1903, when the regiment promptly and efficiently put down disorder in connection with a strike of over 3,000 miners.

Last September was held the first encampment of the guard at the Fort Whipple rifle range, 6 miles from Prescott. The regiment and attached troops, under Colonel McClintock, were in camp a week. The time was spent mainly in exercises, having especial use in training officers and men to care for themselves in camp and on the march and to be effective in the field against an enemy. Especial attention was given also to target practice, for which the near-by target range offered the best of facilities. The camp was highly praised by regular army visitors for neatness and for the manner in which the most absolute sanitary precautions were carried out. This year the command was in camp at the same place for nine days' duty, beginning August 3. This year the men were housed in conical war tents, instead of shelter tents, adding considerably to the comfort of the men.

Many of the officers and men of the National Guard of Arizona have seen service in the Regular Army, in the Rough Riders, First Regiment Territorial Volunteers, and in other volunteer regiments of the Spanish war. The personnel of the guard is of the highest, the men being uniformly of good character and excellent physique. There can be no doubt that in time of need, either in the suppression of internal disorder or for the protection of the nation, Arizona's citizen soldiery will compare favorably with the organized militia of many States and Territories of far greater advantages and much longer service.

THE ARIZONA RANGERS.

Under an act of the legislature approved March 21, 1901, an armed force known as the Arizona Rangers is maintained for the preservation of law and order in the Territory. The force consists of 1 captain, 1 lieutenant, 4 sergeants, and 20 privates, who provide at their own expense their arms, horses, and equipments. The cost of maintaining the rangers during the fiscal year amounted to $33,254.46. The law was enacted in order to enable the authorities to protect the frontier and preserve the peace and apprehend persons charged with crime. The members of the ranger force are authorized and empowered to make arrests of criminals in any part of the Territory. Upon the arrest of a criminal the ranger effecting the arrest is required by law to deliver him to the nearest peace officer in the county where the crime was committed.

While expensive, the ranger force has accomplished excellent results. Prior to the enactment of the law some sections of the Territory were infested by outlaws and desperadoes, and violent crimes, including stage and train robberies, were of frequent occurrence. The mountain retreats in the neighborhood of the Mexican border were the abode of desperate lawbreakers, and the local authorities were often unable to make arrests. A salutary change has been effected. Life and property are safe in all parts of the Territory, and no little credit for this state of affairs is due to the rangers.

The Government of Mexico maintains an active force of rurales in the border State of Sonora, whose functions are the same as those of the Arizona Rangers, and the two forces frequently act in concert. Complete harmony prevails between the two organizations, and they are of substantial assistance to each other. And, noting the good results accomplished by our rangers, the Territory of New Mexico this year established a similar organization—a company of "mounted police"—and harmonious action on the part of the two forces will increase the efficiency of the Arizona Rangers. Manifestly, the maintenance of a mounted constabulary in New Mexico and in the northern border States of the Republic of Mexico furnishes additional reasons for continuing the ranger force in this Territory. One of the strong arguments advanced for the creation of a force of "mounted police" in New Mexico was found in the fact that many dangerous criminals were known to be in hiding in that Territory, having been frightened out of Arizona by the activity of the rangers. It is obvious that if our ranger force should be discontinued this Territory would soon be an asylum for criminals that had been driven out of New Mexico.

The very great extent of country that is sparsely settled in Arizona, and the fact that the centers of population are generally separated by considerable distances, with practically unoccupied spaces intervening, and the contiguity of a foreign jurisdiction, present many temptations for predatory incursions by outlaws from either jurisdiction. Arizona is a frontier country, not only relatively to the rest of the United States, but to the neighboring Republic of Mexico. The remoteness of the country from the more densely populated and older States, and the apparent safety offered by the mountain and desert fastnesses, suggest an asylum for the fugitive from justice,

and afford greater freedom to the reckless and vicious and unrestrained to indulge in their nefarious propensities with impunity.

The local constabulary, although of high efficiency, is limited in its effectiveness to a fixed local habitat at centers of population, leaving necessarily more or less exposed to lawbreakers the intervening spaces. The ranger force is without this limitation. It is so organized that its members may go at once—and they are, in fact, sent by the captain of the force—wherever the exigencies seem to require, to patrol and protect any section of the Territory.

It is one of the functions of the force to acquaint itself with habitual criminals, desperate characters, and fugitives from justice of other States and countries, and to keep them under surveillance. Its greatest efficiency is that of a secret service—always alert, always on duty, and not limited or hampered by fixed locality. The force is wholly auxiliary and supplemental to the local constabulary, although independent of it. Probably the greatest benefit to the Territory from the ranger force is the fear implanted in criminals by its existence. Criminals have been brought by experience to have great respect for the rangers—they know that the rangers, in pursuit of men charged with crime, are relentless and persistent. Criminals know, too, that their movements from place to place in the Territory and their coming into or going out of the Territory are watched. This espionage is of the highest value as a deterrent of crime.

The personnel of the force is selected with great care. Sobriety, integrity, intelligence, physical courage, discretion, gentlemanly deportment, intimate acquaintance with the geography of the country—its roads, watering places, and local characteristics—are all requisites. The force is kept under strict military discipline.

During the year eight members of the force were detailed to work with the live-stock sanitary board in giving special attention to the live-stock interests, and by cooperation with the Arizona Cattle Growers' Association ample protection was afforded. Rangers were constantly riding the live-stock ranges, attending the round-ups, and patrolling those parts of the Territory not usually visited by peace officers, and the list of arrests tells a story of commendable vigilance. It is the belief of the captain, Mr. Thomas H. Rynning, that all the old gangs of "rustlers," smugglers, and wandering outlaws have been broken up. It is known that several desperadoes are in hiding in Mexico and do not dare to return to the Territory. The force has been especially efficient in assisting the Federal authorities in excluding and arresting Chinese who were unlawfully attempting to enter the Territory from Mexico.

During the year arrests were made by the ranger force to the number of 1,052. Of these, 264 were made on felony charges and 788 for for misdemeanors. Of the felony charges, 9 were for murder, 23 for felonious assault, 31 for burglary, 15 for robbery, 19 for embezzlement, swindling, forgery, etc., 23 for grand larceny, 35 for theft of cattle, 28 for theft of horses, etc. There were 13 arrests of escaped prisoners. There were 65 arrests for other felonies. Among these were Federal cases comprising smuggling, passing counterfeit money, desertions from the United States Army, violation of the immigration laws, etc.

Of the misdemeanor cases, 299 were classed as drunk and disorderly and disturbing the peace, 62 were for assault, 28 for petit larceny, 48

for carrying concealed weapons, 20 for violation of butcher license and stock law, 17 for keeping and frequenting opium resorts, 6 for conducting bunco games and gambling without license.

Other misdemeanor and vagrant cases amounted to 298.

Conviction and punishment have followed these arrests in the great majority of cases.

As railroads are constructed to the remote sections of the Territory the prevention and suppression of crime will become easier, and I am hopeful that within the near future the Territory can be warranted in reducing the force and thereby lessen materially the cost of its maintenance.

EDUCATION.

Arizona has an educational system of which the people are justly proud. In the efficiency of its schools the Territory will compare favorably with the older States. The general interest taken in the schools and the cheerfulness with which the expenses of their maintenance is borne attest a high quality of citizenship. There is scarcely a hamlet, no matter how isolated, which does not enjoy the facilities of a public school. Teachers are required to pass a rigid examination as to qualifications before they are employed, and the high salaries uniformly paid helps to secure the best talent.

Parents and guardians are required by law to send their children to school for at least six years—between the ages of 8 and 14—and the law is obeyed almost without exception by American parents. The exceptions are found among the Mexican population, and such exceptions furnish the only really serious problem that confronts the Territory in the matter of education. The law provides that under certain contingencies compulsory attendance may be waived. One of these contingencies is attendance at private schools, another is poverty—the inability of parents properly to clothe their children—and there is, unfortunately, a disposition on the part of Mexican parents to take advantage of these provisions.

Quite generally they prefer to patronize the parochial schools, if such schools are available, rather than to send their children to the public schools. But parochial schools are few in number. The result is that numbers of Mexican children are growing up in ignorance. This condition has prevailed ever since the Territory was organized. Indifference to the advantages offered by the public school system accounts for the fact that practically the only illiteracy to be found in Arizona is the illiteracy of Mexicans. They cling persistently to the Spanish tongue. The children learn a smattering of colloquial English, to be sure, but their conversation among themselves and with their parents is in incorrect Spanish. They do not speak English except when absolutely necessary.

And yet the race has great possibilities. Educated citizens of the Mexican race are prominent in business and the professions and are a credit to the Territory.

It is true that much can be said in extenuation of the attitude of our uneducated citizens of Mexican birth or descent toward the public schools. They look upon Americans as a numerically predominant race, aggressive in the introduction of unfamiliar customs and policies, some of which violate Mexican traditions. Many of them feel

a certain degree of timidity in the presence of Anglo-Saxons, and they are generally reluctant to be considered as intruding their company upon Americans. They prefer to live to themselves and to abide by their own traditional customs. They naturally regard the public school as a peculiarly American institution, maintained for Americans, and with which they have little in common. Their diffidence makes them reluctant to send their children into association with a greatly larger number of American children. Their embarrassment is increased because the American children do not speak the language of the Mexicans. Only patience and tact upon the part of the school authorities, and an effort on the part of all Americans to make the Mexicans feel that they also are American citizens and have a right to enjoy all the privileges of American citizenship, will make the public schools more popular with this class. Also, however, it is necessary for them to realize that they are standing in the way of their own advancement so long as they adhere to the Spanish-taught parochial schools instead of embracing the manifest advantages of the public schools.

It is certainly necessary to amend the law as to compulsory attendance at the public schools School trustees, when assured that parents are unable to clothe their children properly, or when assured that children are attending private instruction at home or attending parochial schools, must perforce accept such statements and excuse the delinquent parents. When analyzed, the alleged inability to clothe children properly for attendance at school is not sustained by the facts, except in rare instances—say, in cases of widows or of invalid fathers. The demand for laborers is always equal to the supply—generally it exceeds the supply—and no citizen, however humble his circumstances, can honestly plead inability to secure employment and inability to procure decent clothes for his children. I am strongly of the opinion that compulsory education without exception should be made the rule by law.

During the fiscal year the number of children attending the public schools was 19,928, the number attending private and parochial schools was 1,659, and the number between the ages of 8 and 21 that attended no school was 8,401.

The following statistics are gathered from the annual school census taken in May, 1905:

The total number of school children between the years of 6 and 21 was 29,290, a gain of 1,960 over the previous year.

The number of white children was 29,133; colored, 157; number enrolled in the public schools, 22,107; average daily attendance, 13,883; number attending high schools, 315; number attending grammar schools, 5,797; number attending primary schools, 15,995; number of men teachers, 97; number of women teachers, 442; average salary paid men teachers, $87.07 per month; average salary paid women teachers, $73.02 per month; total valuation of school property, $944,258; total bonded indebtedness, $452,487.83; value of school apparatus, $25,573.96; value of school libraries, $14,358; number of volumes in libraries, 19,027; number of school districts, 288; number of high schools, 3; number of grammar schools, 146; number of primary schools, 337; number of public kindergartens, 2. The total receipts, including moneys received from sale of school bonds and also including balances on hand June 30, 1904, aggregating $121,203.82, were $644,553.14. The total expenditures for maintenance, buildings, furniture, and miscellaneous expenses, and for the redemption of school bonds ($24,000) were $460,062.53.

NORMAL SCHOOLS.

Two well-equipped normal schools are maintained, one at Tempe, in the Salt River Valley, and the other at Flagstaff, in northern Arizona.

The normal school at Tempe was opened in 1886. For several years the attendance was small, but the increase was gradual until in the year 1894, when the attendance reached 100, and it became evident that a large building was necessary. The present beautiful, commodious main building was completed in 1897. Since 1894 the school has had a very rapid growth, as shown by the following statistics: In 1900 the attendance was 131; in 1901, 137; in 1902, 165; in 1903, 194, and during the last year the attendance was 228.

The attendance at the teacher's training school department in 1900 was 47; in 1901, 48; in 1902, 73; in 1903, 101, and in 1904, 129.

Thus the enrollment of both schools for the year 1904–5 was 357, and I am advised that the attendance will be increased by at least 25 per cent for the ensuing year.

During the coming year there will be 15 members of the faculty, including teachers, in the training school. Every member of the faculty is a specialist in some line of work, and as a body they represent the educational ideas of all sections of the country. The faculty comprises graduates from the following universities: Jena (Germany), Iowa, California, Missouri, Northwestern, Columbia, Chicago, Harvard, Johns Hopkins, Syracuse, Stanford, and Toronto (Canada). Most of them are also graduates of the best normal schools in the United States.

Three regular courses of study are offered—a two years' course to graduates of the high school, a five years' academic and professional course to graduates of the common schools, and a four years' Latin course to students who expect to enter some university after completing the normal course. Special courses are arranged for students who do not expect to graduate. The work of the training school covers the eight grades of the public school. The work of the normal includes English, Latin, mathematics, history, civics, professional instruction, military, manual training, commercial, drawing, and music.

Diplomas are granted to graduates of the normal, which entitle them to teach in the schools of Arizona for life. These diplomas are also accepted in California and other States.

The equipment of the school has received careful attention, and the physical and chemical laboratories are among the best in the world. The biological laboratory is equally well equipped. The library contains about 4,000 volumes, which have been carefully selected by the faculty and represent the work of the various departments. The reading room is supplied with all of the best current literature. Ample provisions are made for athletics. The athletic field is equipped for military drill, football, baseball, and track work. Included in the campus are basket-ball courts and tennis courts.

The campus covers an area of 20 acres. Liberal appropriations have been made from time to time for its improvement, so it now presents a beautiful and systematic appearance—shady groves, green lawns, and beautiful driveways, bordered with many species of palms, cypress, roses, oleanders, pepper trees, and shrubbery of all kinds.

Dormitories are provided for both young women and young men. The ladies' dormitory was constructed two years ago at a cost of $28,000, and has just been enlarged. It now has sufficient capacity to accommodate 88 students, and the young men's dormitory will accommodate 22. Everything necessary has been done to make the dormitories comfortable and convenient homes for the students in them. Good board and furnished rooms can be obtained for $15 per month. This includes electric light, steam heat, running water in rooms, baths, use of pianos, etc.

Altogether, the buildings and equipment of the school represent the expenditure of $193,300. The annual appropriation for the maintenance of the school is about $40,000. The school year is from September 1 to June 1. The total number of graduates from the school is 223. The graduates last year numbered 23. There are 41 students in the senior class of 1906.

The normal school at Flagstaff, although not so extensively equipped as the school at Tempe, is operated on the same lines, and quite as successfully.

The school was opened six years ago, and the attendance has gradually increased from year to year. The total enrollment during the school year which ended June 30, 1905, was 94, comprising 63 in the normal department and 31 in the training department.

The main building is a handsome structure of stone, two stories in height. A dormitory for young women students is under construction and will be completed in September, 1905. Besides the new dormitory many substantial improvements have been made during the year, including the equipment of the physical and chemical laboratories and drawing room, library, and reception room.

In all 38 students have graduated from the school, there having been ten graduates this year. The regular session of forty weeks will open September 12, 1905, and the outlook for a largely increased attendance is encouraging.

UNIVERSITY OF ARIZONA.

The University of Arizona is at Tucson. The institution was established by an act of the thirteenth legislative assembly, approved by the governor March 12, 1885. A tract of 40 acres of land was given by the citizens of Tucson as a site. The university was opened to students in October, 1891. The purpose of the university, in the language of the act creating it, is "to provide the inhabitants of this Territory with the means of acquiring a thorough knowledge of the various branches of literature, science, and the arts," and, so far as possible, a technical education adapted to the development of the peculiar resources of Arizona. In furtherance of this latter purpose instruction is provided especially in agriculture and in the mechanic arts, and in mining and metallurgy. The university, on account of its situation, is especially deserving of the attention of students who wish to take a course in mining engineering. Mines developed on a large scale are within a few miles of the university, and the number and magnitude of mining enterprises are steadily increasing. Probably no university in the United States offers such fine advantages to the student in mining engineering who desires to see the actual opera-

tion of great mines or the development of new mining enterprises while carrying on the theoretical and experimental work of the mining course.

The agricultural experiment station, a department of the university, is wholly engaged in developing the agricultural resources of the Territory.

The university campus, consisting of 55 acres, is situated upon high ground, a mile from the business center of the city, with which it is connected by a street-car line. On every side there is a fine view of mountain scenery of remarkable extent and grandeur.

The main building, University Hall, is 200 by 105 feet, two stories in height. The first story is of gray stone and the second of red brick, and the building is completely surrounded by a wide two-story veranda. The building contains reception rooms, laboratories, apparatus rooms of the various departments, assembly room, and the office and library of the experiment station.

The library and museum building, costing about $32,000, including furnishings, was occupied in June, 1905. It is a handsome red brick and Bedford sandstone building with a massive tile roof. The interior finish is in natural oak and pine. Other buildings provide ample dormitory and dining facilities. In still other buildings are the shops and assaying apparatus and drawing room for mechanical and free-hand drawing. A large building for forge work, machine practice, and carpentry is the shop and assay building. The commercial assaying department occupies a number of rooms fully equipped with a large melting furnace, the necessary muffle furnaces, and other accessories for making complete and accurate assays. The mill, or mining machinery building, is a plain wooden structure in which are placed jigs, concentrating tables, separators, and a stamp mill, constituting the mining laboratory. The gymnasium hall is a substantial building of red brick 40 by 80 feet. The library contains 10,000 bound volumes and 120,000 pamphlets.

In the college are offered courses leading to the following degrees: (1) Bachelor of philosophy; (2) bachelor of science.

The school of mines offers a four-year course leading to the degree of bachelor of science in mining; a short two-year course in mineralogy and assaying.

In addition to the agricultural experiment station, there is a subcollegiate department of manual training. The subcollegiate department embraces manual training, English, scientific and classical subjects, stenography, bookkeeping, and business practice.

The courses offered in the agricultural and mechanic arts provide both a liberal training along literary and scientific lines and technical training along engineering, mechanical, and agricultural lines. Wide latitude of election is given in the literary and scientific courses, but the courses in engineering are more rigid in their requrements. Tuition is free to all students residing in Arizona. For nonresidents a nominal tuition fee is charged.

Military science and tactics for men, and physical culture for women are required during the freshman and sophomore years. The faculty consists of a president and 25 instructors. There were 205 students in attendance during the last year.

ASYLUM FOR THE INSANE.

The Territory has one asylum for the insane, which is located at Phoenix. At the close of the fiscal year it contained 255 patients. Of these, 212 were males and 43 were females. During the year 99 patients were received by commitment and 90 were discharged. Of the patients received, 80 were males and 19 were females. Of the patients discharged, there were 75 males, and 15 females. The number noted under the head of "Discharged" comprised the patients released as cured, 41; released on parole, 12; escaped, 3; and released by death, 34.

The recovery rate on the number admitted during the year was 53.5 per cent. The apparently high death rate was perhaps due to some extent to the overcrowded quarters, although sanitary conditions were maintain at the highest standard that was possible under the existing conditions.

A year ago the construction of additional ward buildings for the asylum was begun, and the work was finished about the first of June, this year. The new construction provided quarters for 96 patients. The new buildings were constructed pursuant to the provisions of an act of the twenty-second legislature, which provided for a bond issue of $100,000 for asylum improvements. The cost of the improvements during the past year has been slightly in excess of $20,000. Undoubtedly the money available from the bond issue mentioned—the bonds are to be sold only as needed—will be sufficient to provide comfortable quarters for all patients for many years to come, notwithstanding the steady increase in the population of the institution.

The nationality of the patients admitted during the past year is fairly illustrative of the nationality of the patients as a whole. The 99 patients received during the year were natives of the following countries: United States, 46; Austria, 3; Belgium, 1; Canada, 6; England, 3; Finland, 1; Germany, 7; Ireland, 3; Italy, 1; Mexico, 21; Norway, 1; Poland, 1; Russia, 1; Spain, 1; Sweden, 2; unknown, 1. It requires but a cursory analysis of these figures to demonstrate that the proportion of foreigners in the asylum greatly exceeds the proportion of foreigners in the population of the Territory. The figures apparently indicate that insanity attacks people of other nationalities more readily than it attacks Americans.

The total expense of maintaining the asylum during the year was $49,654.85. The value of products used from the asylum farm was $5,621.47; cash receipts amounted to $904.91. The net cost of operating the asylum for the year was $43,128.47. The gross per capita cost was $194.22; the net per capita cost, $168.74. The gross daily per capita cost was $0.528; the net daily per capita cost, $0.45.

WOMEN'S CLUBS.

The Arizona Federation of Women's Clubs has a membership of 378. Twelve clubs are included in the federation, namely:

The Woman's Club, Bisbee; organized 1900; 42 members. Object: Study of literature and current events, education, social and civic interests. Meets on Fridays, October to June.

The Village Improvement Club, Florence: organized 1900; 20 members. Object: Town improvement, literature. Meets on Saturdays, November to May.

The Self-Culture Club, Glendale; organized 1901; 6 members. Object: Self-culture, historical studies. Meets semimonthly, October to July.

The Current Topics Club, Nogales; organized 1900; 12 members. Object: Study of current events, parliamentary practice. Meets Fridays throughout the year.

The Friday Club, Phoenix; organized 1897; 13 members. Object: Historical studies. Meets on Fridays, October to May.

The Harmony Club, Phoenix; organized 1898; 30 members. Object: Social intercourse, philanthrophy, music. Meets on Wednesdays, middle of October to May.

The Woman's Club, Phoenix; organized 1900; 71 members. Object: Studies in art and history, civics, and education, music, household economics, social and philanthropic activities. Meets on Tuesdays, middle of October to May.

The Monday Club, Prescott; organized 1895; 79 members. Object: Studies in art, music, and literature. Meets on Mondays, October to June.

The Sahuara Club, Safford; organized 1901; 15 members. Object: Literary and historical studies. Meets semimonthly.

The Woman's Club, Tucson; organized 1900; 50 members. Object: Study of American literature, parliamentary practice, educational and civic activities. Meets on Mondays, November to May.

The Literary Club, Winslow; organized 1899; 15 members. Object: Literary study. Meets first and third Tuesdays, September to June.

The Woman's Club, Yuma; organized 1903; 25 members. Object: Study of history, literature, domestic science, civics. Meets on Fridays, October to May.

ARIZONA POST-OFFICES.

The receipts of Presidential post-offices in the Territory during the year ended March 31, 1904, were $175,740.83, as against $167,419.97 for the preceding year, a gain of $8,320.86 for the year. Receipts of fourth-class post-offices increased from $69,916.11 to $71,378.21, a gain of $1,462.10. The total receipts of Presidential and fourth-class post-offices were $247,119.04, as against $237,336.08, a gain of $9,782.96 for the fiscal year.

The aggregate number of domestic money orders issued from the post-offices of the Territory during the year ended March 31, 1905, was 219,297, having a value of $2,414,432.86, as against 216,068, with a value of $2,465,361.53, for the preceding year. Total number of international money orders issued, 9,309, valued at $279,036.13, as against 6,634, valued at $184,858.75, for the previous year. Domestic money orders paid during year ended March 31, 1905, 66,177, valued at $978,693.10, against 68,237, valued at $1,020,232.87, for previous year; international money orders paid, 419, valued at $11,744.42, against 329, valued at $9,435.10, for the preceding year.

THE LIVE-STOCK INDUSTRY.

The growing of cattle and sheep on the open ranges is the most important branch of the live-stock industry in Arizona. The prosperity of range stockmen depends almost entirely upon weather conditions. Prolonged droughts result in scarcity of water and feed, and at times heavy losses are sustained; and as droughts are not infrequent, the industry has its hazardous features. During the year which ended in July, 1904, the precipitation throughout the Territory was so slight that water on some of the ranges entirely disappeared, and upon nearly all of them it was scarce. The feed on most of them was gone when rains began about the middle of July of that year. The losses

of cattle during the months of April, May, and June were enormous. On some ranges the loss was fully 75 per cent, and it probably amounted to at least 30 per cent, taking the Territory as a whole.

In July and August, 1904, rains were abundant, however, and again in January, February, and March of this year there was heavy rainfall all over the Territory, so that for nearly a year conditions have been ideal on the ranges. With the coming of the rains the range animals quickly regained their strength and soon became fat, and owners are rapidly recovering from their losses. No industry in the Territory is so subject to fluctuation, and two or three years of moderate rainfall are sufficient to place the range stockmen on a high plane of prosperity.

But little expense attaches to the business of growing cattle on the public domain. The ranges are necessarily vast in extent on account of the limited growth of feed almost everywhere, and cattle roam at will except during the spring round-up season.

For the sheep industry the past year has been the most prosperous in the history of the Territory. The sheep ranges are in the northeastern counties, in the mountainous regions, where feed is always more plentiful than upon the cattle ranges in the central and southern regions of the Territory. The sheep men sustained but slight losses on account of the drought. The summer rains of 1904 and the winter rains of this year caused a luxuriant growth of feed on all the deserts, and in January the sheep were driven from the mountains to the central valleys, whence the fat sheep were shipped to market. The yield of wool was excellent, and the high price of mutton and wool have marked the past twelve months as the best in the history of the sheep industry.

Several large shipments of cattle into the Territory from Texas and other States have been reported. These shipments were made for the purpose of restocking the ranges and replacing the losses incurred during the drought. All such importations are carefully inspected and sanitary requirements rigidly enforced.

The live-stock sanitary board reports that the shipment of cattle to points outside of the Territory aggregated 56,317 head. The cattle slaughtered within the Territory numbered 45,753 head.

Notwithstanding the serious losses sustained by range cattlemen, the assessment rolls of this year show a gain of 40,958 range cattle over last year. The range cattle assessed for taxation in 1904 numbered 225,116 head; this year, 266,074. The importations already alluded to explain in part this unexpected gain, and it is further explained by the fact that greater care seems to have been taken this year by county assessors in making their returns.

Abstracts of the assessment rolls of the several counties will be found elsewhere in this report. They show that 339,212 head of sheep were assessed for taxation, as against 277,315 head in 1904, a gain of 61,897. Goats assessed this year number 62,905; last year the number was 61,939. Six thousand nine hundred and seventy-five head of swine were assessed this year, as against 7,736 head last year.

The breeding of high-grade horses is becoming a profitable industry in the Salt River Valley. The climatic conditions are perfect. No shelter is required at any season of the year, and alfalfa makes a perfect forage food for horses. For grain food barley is almost exclusively used and is easily and abundantly raised in the irrigated valleys.

OSTRICH FARMING.

One of Arizona's unique industries is ostrich farming. The rearing of ostriches upon a large scale is rapidly becoming an important business in the Salt River Valley, in the neighborhood of Phoenix.

Ostriches were first introduced into the United States for breeding purposes in 1882. The idea at that time was that if the birds were made to survive in this country they would be available for exhibition purposes. A number were shipped from Cape Town, South Africa, to New York, but many of them died on the way. The surviving birds to the number of 21 were shipped by rail to California. These birds were the nucleus of a farm started at Anaheim, that State. During the next four years other parties ventured into the field of ostrich farming in southern California, 44 selected birds having been imported from South Africa. The first birds for breeding purposes in Arizona were brought to Phoenix from California in 1885 and consisted of 2 grown ostriches and 11 chicks. In course of transportation from California to Phoenix 10 of the chicks died and a short time later the female bird was killed. From the survivors—one male bird and a chick—97 full-grown ostriches were sold in 1897. Since that time the number has rapidly multiplied. The assessment rolls in Maricopa County this year show a total of 1,103 birds on various farms.

The largest ostrich ranch in America at the present time is located 10 miles west of the city of Phoenix. It contains more than 1,000 full-grown birds. The feathers from the birds on this ranch yield annually an income of $30,000. Each bird is plucked every eight months and (according to the report of the superintendent of the farm) averages $20 in plumes at each plucking.

The birds require little care. Their food is alfalfa. The alfalfa fields are inclosed with high wire fences. A section of each ostrich ranch is divided into corrals of about 1 acre in extent, in each of which is kept a single pair of ostriches for breeding purposes. The majority of the birds, however, run in flocks of several hundred.

Alfalfa seems in every way to meet the requirements of a healthful food for the birds. The average bird will eat about 4 pounds of green alfalfa per day, while an average steer will consume about 60 pounds of alfalfa per day. The common herd of ostriches is fed nothing except this green pasturage, and to aid in digestion quartz is added. It is broken up into sizes about as large as hickory nuts and scattered about the fields where the birds eat, and they eat these stones with their food in the same manner as a chicken swallows smaller gravel. In some cases the birds kept in the smaller pens for breeding purposes are fed small amounts of grain daily. It is a notable fact that the climate of the Salt River Valley seems to agree with the native requirements of the ostrich. Rarely, if ever, is an ostrich sick. The average life of one of these huge birds is seventy-five years, but the average time of usefulness is twenty to twenty-five years. After that the plumage begins to lose its brilliancy.

It is claimed that the plumage of the ostriches raised in Arizona is more beautiful than that of the birds of South Africa. The London critics claim that the difference is so marked as to make the feathers of the Arizona birds worth more than the ostrich feathers shipped from Africa.

The plucking of the ostrich is done by putting the bird in a V-shaped corral, which is just large enough to admit the bird and a plucker. A hood, shaped like a stocking, is placed over the head of the ostrich, and as soon as this is done the bird becomes perfectly docile. The workman then raises the wings and clips the feathers that are fully ripe. Great care is exercised at this time, as a premature cutting of the feathers damages the succeeding growth. Two months after the large feathers are cut off the quill has become dried up and is pulled out. By taking the feathers in this manner the bird suffers no pain. The ostrich is first plucked when 6 months old; at that time it is 6 feet high. The first crop of feathers is of little value, and succeeding crops are taken every eight months. The third plucking is the first full crop.

Ostriches first mate at 4 years of age, and remain paired for life. The nest is merely a hole scooped in the ground by the breastbone of the bird, and is about 1 foot in depth and 3 or 4 feet in diameter. Eggs are laid every other day until 12 or 14 are deposited, each of which weighs from 3 to 4 pounds. The eggs are turned daily in the nest and are incubated in forty-two days. The male takes the nest in the afternoon and is relieved in the morning by the female, who goes on duty for the balance of the day. The chicks, when hatched, are about the size of a domestic hen. The chicks grow about 1 foot in height per month until they attain their full height.

It is not easy to state the market value of an ostrich, for the reason that few of them are for sale. Ostrich growers estimate their chicks as worth $100 at 6 months old; $150 at 1 year old; $200 to $250 at 2 years old; $300 to $350 at 3 years old; and at 4 years of age, when they begin to breed, they are valued at $800 per pair and upward. It is claimed that there are pairs of ostriches in the Salt River Valley that $2,500 would not buy. The increase is estimated at 10 chicks from each pair annually.

So successful has ostrich farming been in this valley that some of the growers predict that within the next five years cattle will have given way entirely to ostriches on the alfalfa ranches of the valley.

PUBLIC HEALTH.

The health of the people has been good throughout the year; no epidemics have prevailed. This, however, is a normal condition in Arizona. No other section of the world, perhaps, has a more salubrious climate; few can offer a climate so nearly perfect. Endemic diseases do not exist, and zymotic diseases are extremely rare.

The death rate of the resident population is famously low. Not only that, but the climate is conducive to long life. According to the census of 1900, there were in Arizona 26 persons that were 100 years of age or over; 27 that were over 95; 59 that were over 90; 67 that were over 85; 283 that were over 80; 444 that were over 75. This was a better showing, proportionately, than was made by any other subdivision of the Union. Vital statistics would show an astonishingly low death rate were it not for the fact that invalids come here too late to recover their health.

Arizona has achieved a reputation abroad for having extremely hot summers, and the supposition in the Eastern States seems to be that in Arizona summer is almost unbearable. Exactly the contrary is the

case. It is true that thermometers uniformly register, through June, July, August, and the first half of September, a high degree of temperature. In the central and southern valleys the average temperature during the day in the months mentioned is about 106° F. in the shade. The highest temperature officially recorded at Phoenix was 116°. But there is a vast difference between the registered temperature and the sensible temperature. The percentage of humidity is so low that less discomfort is caused by a temperature of 116° than by 85° in the humid regions of the east. Sunstrokes are practically unknown. In the rare cases of prostration from heat the primary cause can always be traced to alcoholism or abnormal weakness. By an act of the twenty-second legislative assembly a Territorial board of health was established, consisting of the governor, ex officio president; the attorney-general, ex officio vice-president, and the superintendent of public health, secretary. The superintendent is appointed for two years. The board has power to establish quarantine, and, generally, to protect the public health. Physicians, before being admitted to practice, must pass a rigid examination before the Territorial board of medical examiners, the members of which are regular practitioners and in all respects fully qualified as physicians and surgeons. Druggists, in order to practice as prescription pharmacists, must pass a rigid examination before the Territorial board of pharmacy, the members of which are graduated pharmacists of recognized standing.

The following table shows the number of registered physicians and druggists in the Territory, by counties:

Physicians and druggists.

County.	Physicians.	Druggists.	County.	Physicians.	Druggists.
Apache	3	8	Pima	21	13
Cochise	41	21	Pinal	5	3
Coconino	9	11	Santa Cruz	8	6
Gila	14	3	Yavapai	31	18
Graham	20	19	Yuma	8	6
Maricopa	54	34			
Mohave	11	2	Total	233	144
Navajo	8	2			

NEWSPAPERS.

The newspapers of Arizona are a credit to the Territory. There doubtless are many people in the Eastern States who are quite sure they understand all about Arizona journalism, and their understanding is based on the information furnished by alleged humorists through some of the metropolitan papers. Arizona newspapers will not suffer in comparison with the country dailies and weeklies of the most populous States. Quite generally the publications issued in the Territory are noted for a commendable public spirit, for intelligent discussion of the questions of the day, for their conservative tone, and for the cleanliness and dignity of their columns.

There are 56 newspapers published in the Territory, of which 15 are dailies, 37 are published weekly, 1 semimonthly, 2 monthly, and 1 quarterly.

CUSTOMS SERVICE.

The rapid growth of commerce between the United States and Mexico is shown by the statement furnished me by the collector of customs at the border town of Nogales, the principal port of entry for the Territory. In addition to the custom-house at Nogales, subports of entry have been established at Douglas and Naco, two new and thriving towns on the Arizona-Sonora boundary line, and also at La Osa, Lochiel, and Yuma.

The total value of imports for the fiscal year was $13,050,436, a gain of $5,314,850 over the previous year.

The total value of domestic exports was $5,687,260, a gain of $5,427,848 over the previous year.

The total value of foreign exports was $184,859, a gain of $152,094 over the previous year.

INTERNAL-REVENUE SERVICE.

The collector of internal revenue for the Arizona-New Mexico district reports to me that there was a gain of $4,184.17 in the collections for the fiscal year over those of the previous year.

Statement of the collections for the last two fiscal years.

	1904.	1905.		1904.	1905.
Special-tax stamps	$31,959.98	$28,171.70	Fines, penalties, and interest	$1,012.07	$1,219.73
Tobacco stamps	999.00	1,518.54	Documentary stamps	5.00	4.00
Beer stamps	855.00	9,049.00			
Cigar and cigarette stamps	7,658.19	6,710.44	Total	42,489.24	46,673.41

STATEHOOD.

The defeat of the bill enabling New Mexico and Arizona to jointly form a State constitution, and providing for their ultimate admission to the Union as one State, was received by the people of the Territory with universal gratification. The small margin by which the defeat was effected in the Senate and the prompt avowal by the friends and advocates of that measure of their purpose to renew their efforts at the next ensuing session of Congress has, however, excited general alarm.

The proposed union is regarded by our people as a menace to the prosperity and progress of the Territory.

For more than forty years the people of the two communities have lived in separate Territories, and whatever of progress or achievement they have attained they have attained them under totally different conditions, both artificial and natural. The proposed union involves necessarily a change in those artificial conditions. Either the people of New Mexico will have to abandon her laws and customs and adopt those of Arizona or the people of Arizona will have to submit to those of New Mexico. As New Mexico has the larger population, it is not to be expected that the people of that Territory will voluntarily abandon their laws, their habits, and customs to adjust

themselves to those prevalent in Arizona. There is no reason that they should do so; if there were, then those laws would long ago have assimilated themselves to our own. It is not at all probable that New Mexicans would be persuaded that Arizona laws are to be preferred to their own, nor is it any more probable that Arizonians would have preference for those of New Mexico.

The question of which of the two systems is better adapted to the purposes of the government of the people of the proposed joint State is not necessarily involved; if it were, it would be useless to discuss it. If there are any lines upon which there would apt to be a division, the people of New Mexico, being the more numerous, would prevail. To suppose that it would be otherwise is to suppose that the New Mexicans have deliberately adopted a system of laws with which they are dissatisfied, and yet one which they persistently retain. It is true that a system of laws different from that prevalent in either of the two Territories might be adopted for the government of the two Territories when they shall have jointly become a State, but this is improbable, as it involves an abandonment by the people of both of the Territories of habits, customs, and laws to which they have long become accustomed, and with which it must be presumed they are satisfied. This presupposes a double sacrifice—the voluntary abandonment by each of those customs, habits, and laws which have been the means or the incidents of their separate development, and the adoption of a radically different set of rules to govern them in the future. And it is not a question whether it might not be well for both that a new system of rules should be adopted. That may be conceded, for it may be true of every Commonwealth in the Union, but if it is it must be viewed from that standpoint from which no true American will consent to view the matter. That standpoint is the one of the superior wisdom and benevolence of the proposed lawmaker to those to be governed by the proposed law. The American, or the citizen of any free and independent State, will not concede the superior wisdom and benevolence of the lawmaker unless he himself is that lawmaker. We have been taught to believe that any other lawmaker than the people themselves is necessarily a tyrant, and laws so made tyrannical edicts against which it is patriotic and heroic to rebel. Sophistry and philosophy may either teach a different rule, but Americans are not apt pupils in that school.

That all just governments must derive their powers from the consent of the governed is a fundamental dogma of all American institutions. It admits of neither dispute nor argument. In recognition of and in consonance with this doctrine Congress, in 1863, gave to the people of the Territory of Arizona the power to legislate upon all rightful subjects of legislation not inconsistent with the Constitution and laws of the United States. It is not necessary to discuss the origin of the power of Congress to grant this power of self-government, nor even to admit it, for it is fully, freely, and unquestionably acquiesced in; nor is it necessary by the application of the fundamental dogma that the power was not a subject of grant by Congress, as that power was always and always will be inherent in the people, independent of their inclination or ability to assent to or exercise. Later Congress imposed on the legislative power of the Territories further limitations, but this does not impute a want of the ability in the Territories of self-government, for these limitations

are identically those imposed by the constitutions of many of the States upon their own legislatures. They were found by practice and experience to be beneficial there, and under the peculiar system of the government of the two Territories the people of the Territories could not, as the people of a State can, prescribe these limitations. Congress, in which that power is temporarily and by necessity vested, did impose those limitations.

Under this plenary power of legislation, subject to limitations less restrictive than those probably imposed by any of the legislatures of any of the States, whether self-imposed or not, Arizona originated, or adopted, and put in operation her own system of laws, and for more than forty years has had its being, attained its present development, and established those principles of jurisprudence that are designed to foster and promote further progress and achievement, under those laws and their logical development. That better laws might be devised, or that those which we have might be better enforced may be conceded; but it can not be conceded that any other people or power than the people of Arizona has the right to devise or enforce them, except only, until we have attained the dignity of statehood, Congress itself.

It can not be justly asserted by those who revere American institutions that that complete local self-government which is naturally vested in the people of the States should be denied to the people of the Territories because of a lack of the intelligence of the people of those Territories, their want of moral development, or their incapacity to understand or appreciate the principles of self-government. That denial must be justified on other grounds, if at all. That a community is too small numerically, relative to the extent of the territory occupied, and does not possess the wealth necessary to assume the burden of a State government may be admitted to be a sufficient reason for the establishment and maintenance of the temporary Territorial form of government prevalent in the United States. The reason is not inherent in the people themselves, but in the conditions incident to their place of residence. But while, for this reason, they may be denied self-government as complete as that which the people of a State enjoy, they are not withdrawn from the principle of the American doctrine that the just powers of government are derived from the consent of the governed.

The bill for the joint statehood of New Mexico and Arizona, which passed the lower House of Congress at the last session and which was so narrowly defeated in the Senate, distinctly violated this principle. While professing to be merely an act to enable the people of the two Territories to effect jointure, and, being joined, to frame and adopt a constitution and thereafter be admitted as a State of the Union, the bill, if it had become a law, instantly effected the jointure by its own operations without the consent of the people of either Territory. The bill provided for a constitutional convention of delegates, elected from the two Territories, joined for that purpose. The separate and distinct entity of the peoples of the two Territories was wholly ignored, and only the united people of both was considered. The jointure was at once effected. The apportionment of a certain number of delegates to Arizona and a certain number to New Mexico was not based upon any notion of two separate and distinct peoples, nor as a recog-

nition of their independence of each other, but as a mere convenient method of apportionment. Upon the assemblage of the convention so constituted every such distinction would disappear. The delegate from a locality in Arizona would have no other or further rights, could exercise no other functions, and would be entitled to no other consideration, nor exercise any other influence as a member of that body than could any delegate from any locality in New Mexico; nor could the aggregate number of delegates from that extent of country within the boundaries of Arizona have or exercise any rights, privileges, or powers other than a like number from the Territory of New Mexico. The distinction in theory and in practice, it is obvious, would entirely disappear.

The powers, rights, and privileges of the aggregate number of delegates from Arizona were not to be equal to the powers, rights, and privileges of the aggregate number of delegates from New Mexico, because the number apportioned to New Mexico greatly exceeded the number apportioned to Arizona; and in this is an instance of the flagrant violation of the American principle, that the just powers of government are derived from the consent of the governed. It would thus be made possible that the delegates from New Mexico, in a convention thus constituted, could form and adopt a constitution repugnant in every particular to the people of Arizona, subversive of their interests, impeding their progress, offending their pride, and humiliating them to the last degree against the will and protest of every delegate from Arizona.

It is not a sufficient argument for the proposed law to say that it is not probable that the New Mexicans would do this. They do now have a different system of laws, one we conceive to be not adapted to our genius, and which is of their own choosing. What would prevent their injecting it into the proposed constitution? What reason can we give for their not doing it? But it is submitted that the fact that the proposed law makes this possible is sufficient to condemn it as unjust, unwise, and peculiarly un-American.

Again, it is provided by the proposed law that when the constitution shall have been framed and adopted by the convention it shall be submitted to the people, not of Arizona, nor of New Mexico, but to the people of the two Territories joined for that purpose, for ratification or rejection. Thus it will be seen that the jointure will have been effected by mere force of the bill and without the consent of the people being either asked or given. By this process a constitution may be framed by the convention against the protest of every Arizona delegate, and may be ratified and become the fundamental law governing Arizonians, notwithstanding the negative and dissenting vote of every elector in Arizona.

There is no doubt that an overwhelming vote of the people of Arizona would be recorded against any constitution which involved the jointure of the two Territories as one State. Yet, notwithstanding that, we would be by the preponderant vote of the New Mexicans subjected irrevocably to a fundamental law against which we in vain and uselessly protested.

Again, the proposed law provides for the election of State officers at the same election as that at which the question of the ratification or rejection of the proposed constitution is submitted, proceeding upon the theory of an already effected union of the two Territories.

This provision, we are frankly told, was made to insure the adoption of the constitution by exciting partisan strife for office.

So completely would the people of Arizona be bound by the domination, influence, and numerical preponderance of New Mexico that, even if they should refuse to elect or to send delegates to the constitutional convention and should refuse to open the polls for votes at the election called to ratify or reject the proposed constitution, they would nevertheless, against their will, become subject to a State government and a State constitution to which they in no wise gave their consent. If it should be said that the people of Arizona would not have any right to object if she took no part in the State-making process—that their absence from the polls conclusively implied their assent—then we are forced to the position that there is no alternative for us. If we should not go to the polls, we are presumed to assent; if we do go to the polls and are overwhelmingly outvoted by the New Mexicans, we are bound directly against our consent.

It may be said by some that a majority of Arizonians would favor joint statehood and a constitution involving that form of government; or it may be said that possibly a majority of the people of New Mexico and a majority of the people of Arizona are opposed to joint statehood. No fair-minded Arizonian would predict that any constitution involving jointure with New Mexico could receive the majority of the votes cast at an election in Arizona. The most conservative Arizonian will say at once that there would be an overwhelming majority against such a constitution.

The question whether the New Mexicans, with their numerical preponderance in the convention and at the polls, would accede to our views, or whether we might not agree instantly upon a new policy for the new State, is an assumption that does not warrant the closing of the door against the people of Arizona; no one can safely predict the action of the people of New Mexico. The principle itself proposed in the joint statehood legislation is wrong and subversive of the rights of any people. If it were only a question of agreement, then it should be submitted to the people of the two Territories separately. The jointure ought to be effected only after the people agree upon it.

If it were proposed to call a convention of delegates elected by the people of New York and by the people of Massachusetts, the number to be in the proportion of the respective population of the two States, each of the delegates to have one vote in the convention, and if that convention were charged with the framing of a constitution for the government of the people of the two States, and if the question of the ratification of that constitution were to be determined by a majority of all the votes cast in both States at an election called for that purpose, the matter would present itself very forcibly to the people of those two States, and there could be no question that the proposition would be denounced as violating every principle of right and justice and that particularly fundamental one that the just powers of government are derived from the consent of the governed.

Of course, it would be objected to any such proposition that the Constitution itself inhibits the junction of two or more States without the consent of the legislatures of the States concerned, as well as of the Congress. But it must be admitted that it is not wise or just to join two States as one without the consent of both separately given,

independently of the question whether the Constitution forbids it. The justice or injustice, the wisdom or folly, of such a procedure is not dependent upon the expressions of constitutional provisions. It was because it was unjust to the people of any State to compel them to be subjected to a system of laws to which they did not assent that this provision was placed in the Constitution. By inserting it there was no new standard of justice raised; and the injustice of the proposition to join the two separate and distinct peoples, and thereby subject either or both to a government which is repugnant to them or either of them, is absolutely independent of the constitutional provision.

The answer to the proposition to effect the junction of New York and Massachusetts in the manner proposed for the junction of New Mexico and Arizona—that it would be unconstitutional—would, in legal contemplation, be conclusive. That it would be unconstitutional must be admitted. But the answer simply reverts us to the inquiry as to why the constitutional inhibition was inserted; and the answer to that is that it would be unjust to compel such a junction without the assent of the people concerned. In short, it is not unjust because the Constitution inhibits it, but the Constitution inhibits it because it is confessedly unjust. And in proportion as we lose sight of and ignore this distinction we are apt to depart from the correct theory and practice of just and wise government. It doubtless will be argued at once that the constitutional inhibition cited is not applicable to the Territories; that, in terms, it applies only to States. That it does or does not apply to the Territories by strict construction is not important. The broad doctrine that the just powers of government must be derived from the consent of the governed finds in this constitutional provision a specific application—that is, that the separate peoples of two States shall not be subjected to a government to which they do not separately consent. And that doctrine has no rational or just limitation by any refined distinction between a "State" and a "Territory." The "State" and the "Territory" may import different forms of government, but they are both distinctively and essentially American, with all that term implies.

That under American institutions and in accord with American notions of government every power of government resides primarily in the people will hardly be disputed; at any rate, it will not be here admitted to be a subject of argument. It was the people of the United States that ordained and established the Federal Constitution, and it was the people of the various States, separately and without interference by other States or by the General Government, that framed and adopted the fundamental laws of those States. That there may be a difference between a State and the people inhabiting it—that they may constitute different entities—is not a matter of consideration here. If there be a difference, and if they are different entities, the State in any event must be the creation of the people and existing only by their will. It can not be conceived that a State has any power or can exercise any function except the will of the people, in whom the ultimate power is vested. What a "State" is might be a very interesting subject of academic discussion, but we do not see its importance here. In the particular clause of the Federal Constitution to which I have referred—that inhibiting the junction of two

States—the word "State" in its singular or plural form is used six times. It is not probable that the framers of the Constitution intended it to have as many meanings, or that it should have more than one. That in any of its uses there the meaning of the word State should be taken to be a people or community inhabiting a defined extent of territory over which the laws enacted by that people have validity and force would be sufficiently definitive, at least for our purpose, seems obvious. That new States may be admitted into the Union presupposes the existence of the State prior to admission—that is, existence of a people inhabiting a defined extent of territory over which the laws enacted by that people have validity and force.

It is certain that Congress is not authorized to make or create a State. The State must have its existence, its beginnings, its creation, otherwise than by any act of Congress, and doubtless it is inherent in the people inhabiting the defined extent of territory. What does a Territory lack of being a State? There are States that are not States of this Union, or of any union. The Constitution recognizes this fact repeatedly, as where it guarantees to "any State in this Union" a republican form of government, etc. The term is not peculiar to republics or unions of republics. What is there in the situation of a people inhabiting an organized Territory that withdraws them from the application of the fundamental American doctrine that the just powers of government must be derived from the consent of the governed? Is it because Congress has full power to make all needful rules and regulations respecting the territory and other property of the United States, or that the power of Congress to govern the Territories is incident to the power to acquire new territory by conquest, purchase, cession, or otherwise?

But whatever the source of that power, so far at least as it relates to Arizona and New Mexico or the people of those Territories, it is purely temporary. As a mere expedient, possibly from necessity, and until the people of the Territory shall have attained numbers and wealth sufficient to take upon themselves an independent local government, the power to govern them is assumed and exercised by the Federal Government. But the power of such temporary government certainly did not include the power to create or compel the creation of a permanent government against the will of the people of the Territory. It certainly will not be denied that there is no right guaranteed to the people of the United States or to the people of any State of the Union by the Federal Constitution that is not by that same instrument guaranteed to the people of Arizona. In every right incident to American citizenship the citizen of Arizona is the equal to the citizen of any State of the Union. That he can not exercise some of the rights of American citizenship is a temporary deprivation due to temporary conditions. And it is submitted that in the aggregate as a people inhabiting a defined Territory, exercising therein the rights of self-government, the people of Arizona are as much the beneficiaries of that fundamental doctrine that the just powers of government are derived from the consent of the governed as are the people of any other extent of territory within the limits of the Union, whether in a State of the Union or not. Whatever power Congress has over that people, it never had and by the very genius of American institutions could not have, the right to exercise it in derogation of the rights of American citizens.

To regard the people of Arizona and the country they inhabit as a mere dependency of the Federal Government is not to be admitted. By the terms of the cession of the Territory to the United States the inhabitants became, without other act of theirs than mere continued residence there, citizens of the United States. It certainly will not be contended that those of the inhabitants of Arizona who migrated hither from other States lost any of the attributes of American citizenship. And these constitute the people of Arizona. The Indian seems to have no recognized political status, and is left out of consideration. The creation of a State, the formation of a constitution, and the enactment of laws thereunder for the government of its people are all acts of the people of that particular extent of territory which they inhabit. They can originate nowhere else, and whether that people, being American citizens, residing upon American soil, shall have attained to sufficient numbers and have sufficiently developed its resources to assume its ability to maintain a government or not, its right to establish a State is absolute; and if that government is republican in form its admission into the Union is a matter of right. There can be, it seems to me, no other logical conclusion. The power of the Federal Government to govern any people, whether of the States or of the Territories, is either expressed in the Constitution or is one inherent in all governments. If it is an inherent one it can not, notwithstanding its being extraconstitutional, be exercised in contravention of the will of the people or of the spirit of the Constitution. If it can be an expressed constitutional power it must be exercised with complete regard for the rights of American citizens.

I suggested for illustration the substitution of New York and Massachusetts for New Mexico and Arizona in the situation in which the proposed joint statehood bill, if it became a law, would place them. Every argument that can be urged with any view to justice for the junction of New Mexico and Arizona into one State can, with even more force, be urged for the junction of New York and Massachusetts. If homogeneity of population be a reason for uniting two peoples into one system of government, then that reason is stronger in the case of New York and Massachusetts than in the case of New Mexico and Arizona. If community of interest be a reason, the stronger reason again is for the junction of the two great Commonwealths on the Atlantic than in the case of the Southwestern Territories; and so with intimacy of association. If increased extent of territory, population, wealth, and resources is any reason for the jointure of New Mexico and Arizona, and that prospect be a persuasive appeal to the pride, patriotism, or vanity of the proposed greater Arizona, would not the same appeal for the greater New York be as equally effective with the people of New York and Massachusetts? If freedom and ease of communication and commerce between the component parts be an argument for making one State of the two Territories, even a greater freedom and ease of such communication and commerce between the two States would present a more forcible argument for their junction. If the line between New Mexico and Arizona, separating them one from the other into two distinct peoples, is but an imaginary one, insignificant of nothing but that it is a boundary line, and it is assumed that therefore it should be ignored, so, too, by the same process of reasoning the line that separates New York and Massachusetts should be wiped off the map and known no more. If

the necessary expenditure of public money for the maintenance of the proposed new State made of the two Territories would be less than the cost of the maintenance of two separate States, so, too, in probably greater degree would be the cost of maintenance of a State made of the junction of the two States be less than the cost of the maintenance of the separate States. If the use of a common language, or the tradition of a common or an assimilative ancestry, suggests the propriety of the jointure of two hitherto separate peoples into one State, then it is incomparably more proper that one State be made of New York and Massachusetts than of New Mexico and Arizona. And likewise whatever of just and valid objection that could be urged against the junction of New York and Massachusetts can with equal justice be urged against the enforced jointure of the two Territories against the will of the people of either.

That the junction of New York and Massachusetts into one State would involve the loss to the people of two representatives in the Senate, or of a vote to ratify or reject an amendment to the Federal Constitution; or of a vote for President in the event the electoral college should fail to elect, does not destroy or even lessen the analogy I attempt to show between the States and Territories in the respects in which we have considered them, nor tend to mar the illustration I intended to make. On the contrary, these very things serve to make the analogy more complete, and to illumine the attempted illustration.

To deprive the people of a State, either directly or indirectly, of its rightful representation in making the laws, or in choosing the executors of the laws, is directly contrary to that fundamental doctrine that the just powers of government must be derived from the consent of the governed. And it is no more unjust and no more indefensible to take away a right from a people without their consent, a right that they have theretofore exercised, than it is for the Federal Government, charged only with the temporary government of the Territories of New Mexico and Arizona, to by any law or act make it impossible for the people of those Territories ever to have and enjoy rights guaranteed to States by the Constitution. For every purpose for which Congress may legislate for Arizona or New Mexico, except for their temporary government, these Territories must be regarded as "States." Congress confessedly can make no law permanently affecting the people of either of these Territories concerning their local affairs. Any such law is instantly abrogated by the admission of the Territories into the Union.

It should be borne in mind that the Federal Government is under treaty obligations to admit the Mexicans who inhabited these Territories at the time of the cession into the Union. Congress certainly will not be less considerate of and just to those inhabitants of these Territories who were born citizens of the United States and have migrated from other States; it is for this reason, if for no other, that the power of Congress to govern these Territories is only temporary. For more than forty years citizens of other States have migrated to Arizona, attracted either by its promise of self-government, its wealth of undeveloped resources, or the salubrity of its climate. They have laboriously built up a Commonwealth, and whether it be great or contemptible, it has their allegiance, their loyalty, and their affection, and in it they have an abounding self-

pride. A more patriotic people, a people more intensely American, or more devoted to the great Union than are Arizonians, inhabits no State or Territory within its confines.

They ask most respectfully, but most earnestly, that no law shall be passed by Congress which shall make Arizona a component part of any State without the consent of her people. Do not force a union upon her.

Upon the floor of the Senate, a most distinguished presence, while the bill for joint statehood was under discussion, an advocate of the passage of the bill gave utterance to the words of Lincoln that this is "a government of the people, by the people, and for the people." If that bill had become a law, or if a like one, which is threatened and feared, should be come a law, the condition established would render the apothegm incomplete. Such a law would make it possible, and I am constrained to say that I believe, inevitable, that if a constitution were adopted and a State government established thereunder, it would be against the vote of an overwhelming majority of the voters of Arizona. In its application then the phrase should stand: "This is a government of the people of Arizona, by the people of New Mexico, for the people of Arizona."

Arizona yields ready assent to temporary government by the United States that is provided for by the treaty, possibly by the Constitution, and in any event it is a necessary temporary expedient. But it is submitted that there is just cause for complaint if Congress should pass a law that permanently subjects Arizona to a government to which she does not assent.

It is urged that the nation is interested in the question of the admission of Arizona to statehood. That is obvious. But a just nation—the American nation—can not have an interest to be subserved in subjecting Arizona to a State government against her consent; to compel her to accept a constitution repugnant to her people and to be governed by laws ill, or not at all, adapted to her genius or conditions. The nation could not have an interest that would justify that wrong. Many of those who advocated the passage of this bill upon the floors of Congress deprecated the follies and mistakes that mar the history of the admission of many of the States. Those follies and mistakes grew out of a departure from rules indicated by strict right and justice. There are some suggestive similarities in the history of this bill and the omnibus bill of 1850. The reputations of some very great men went upon the shoals then.

The solution of the situation is easy, in consonance with every principle of justice. If Arizona possesses the qualities necessary to the establishment and maintenance of a State government, she should be admitted. If she does not, then she should not be admitted, and her right should be held in abeyance until she does acquire them; and the question ought not to be determined by the question of the admission or exclusion of the other Territories, or any of them, any more than in 1850 the admission of California should have been made to depend upon the organization of the Territories of New Mexico and Utah. If, again, it seems to Congress that the welfare of the nation would be better promoted by the jointure of New Mexico and Arizona and the creation of one State out of the two Territories, the simplest and the only just plan is to provide for procuring the assent of the

two peoples, if they in fact do assent. If either dissents, no interest of the nation will be jeopardized.

Arizona would be inhabited by a strange people if they did not want statehood, and want it earnestly, and strive for it zealously. If they did not want it, then Arizona would not make a good State of the Union. But they want statehood for that Commonwealth which they have built up, in which their hopes are bound. They want it as their reward for their conquest of the desert, their searching of the mountains and disclosing the fabulous wealth of her mines. They want it for the protection and for the fostering of all her varied industries. As all their hopes, their ambition, and their pride are bound up in that State, they insist that they should be its designer and its builder.

The people of Arizona have had to contend and must yet contend against peculiar difficulties. To the denizen of the older States the conditions are anomalous. Climate and climatic conditions are so radically different from those found in almost every other part of the Union that different methods of warfare must be adopted in the attempted conquest of the desert.

Whatever of glory may be in the final conquest, whatever of happiness it may bring to her people, should by right belong to them. The notion of a "Greater Arizona," with the elimination of Arizona, does not appeal to her people. For years Arizona has asked to be admitted to the Union, and will continue to ask. And she does not believe that a just nation will exercise a power to punish her for her temerity in asking for her own.

Yours, respectfully,

JOSEPH H. KIBBEY,
Governor.

Hon. E. A. HITCHCOCK,
Secretary of the Interior, Washington, D. C.

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